IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

BIO-RAD LABORATORIES, INC. and PRESIDENT AND FELLOWS OF HARVARD COLLEGE Plaintiffs, v. 10X GENOMICS, INC., Defendant.	Civil Action No. 1:19-cv-12533-WGY **DEMAND FOR JURY TRIAL**
10X GENOMICS, INC., Counterclaim Plaintiff, v. BIO-RAD LABS., INC., Counterclaim Defendant, and PRESIDENT AND FELLOWS OF HARVARD COLLEGE, Nominal Counterclaim Defendant.	

10X GENOMICS, INC.'S PARTIAL AMENDED ANSWER TO BIO-RAD LABORATORIES, INC. AND PRESIDENT AND FELLOWS OF HARVARD COLLEGE'S COMPLAINT AND 10X GENOMICS INC.'S AMENDED COUNTERCLAIMS AGAINST BIO-RAD LABORATORIES, INC.

10X Genomics, Inc. ("10X") hereby answers in part the Complaint of Bio-Rad Laboratories, Inc. ("Bio-Rad") and President and Fellows of Harvard College ("Harvard") (collectively, "Plaintiffs"). 10X has moved to dismiss all Counts of the Complaint. As such, 10X is not required to answer the Complaint until the time prescribed in Rule 12(a)(4) of the Federal

Rules of Civil Procedure after the Court resolves 10X's motions to dismiss. *See Bay State HMO Mgmt. v. Tingley Sys*., 152 F. Supp. 2d 95, 122 (D. Mass. 1995); Order accepted on July 18, 2001 by *Tingley Sys., Inc. v. CSC Consulting, Inc.*, 152 F. Supp. 2d 95, 98 (D. Mass. 2001). In particular, pursuant to Rule 12(b)(3) of the Federal Rules of Civil Procedure, 10X has moved to dismiss Plaintiffs' venue allegations regarding U.S. Patent No. 10,190,115 (the "115 Patent") as well as Count III alleging infringement of the 115 Patent. ECF Nos. 24-25. Further, pursuant to Rule 12(b)(6) of the Federal Rules of Civil Procedure, 10X has also moved to dismiss Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement in all three Counts for failure to state a claim. *Id*.

On January 14, 2010, this Court consolidated this case for "the purposes of discovery" with *Bio-Rad Laboratories, Inc. v. Stilla Technologies, Inc.*, No. 1:19-cv-11587-WGY ("*Stilla* Case"). *See Stilla* Case, ECF No. 78. Thus, in the interest of expediency and efficiency, 10X hereby answers Plaintiffs' allegations relating to literal direct infringement of U.S. Patent Nos. 8,871,444 (the "444 Patent") and 9,919,277 (the "277 Patent"). 10X is not answering the Complaint with respect to any of the specific grounds set forth in 10X's Motions to Dismiss, and thus 10X is not answering Bio-Rad's allegations relating to the 115 Patent or any of Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement in all three Counts, and is not making any admissions with respect to any of those allegations in the Complaint. 10X hereby answers in part as follows:

NATURE OF THE ACTION

1. 10X admits that Plaintiffs purport to bring claims under the patent laws of the United States, Title 35 of the United States Code. Except as expressly admitted, 10X denies each and every allegation set forth in Paragraph 1 of the Complaint.

2. 10X admits that Plaintiffs purport to bring claims under the patent laws of the United States, Title 35 of the United States Code, which relate to U.S. Patent Nos. 8,871,444 (the "444 Patent") and 9,919,277 (the "277 Patent"). 10X admits that Exhibit 1 purports to be an uncertified copy of the 444 Patent. 10X admits that Exhibit 14 purports to be an uncertified copy of the 277 Patent. Except as expressly admitted, 10X denies each and every allegation set forth in Paragraph 2 of the Complaint. 10X has moved to dismiss Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement for failure to state a claim under Rule 12(b)(6) of the Federal Rules of Civil Procedure relating to the 444 and 277 Patents. ECF Nos. 24-25.

3. Bio-Rad's allegations in Paragraph 3 of the Complaint are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

THE PARTIES

4. 10X is informed and believes, and on that basis admits, that Bio-Rad is a corporation organized and existing under the laws of the State of Delaware, having a principal place of business at 1000 Alfred Nobel Drive, Hercules, CA 94547. Bio-Rad's allegation in Paragraph 4 of the Complaint regarding the 115 Patent is subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25. 10X lacks sufficient knowledge or information to form a belief as to the truth or falsity of the remaining allegations set forth in Paragraph 4 and on that basis denies them.

5. 10X is informed and believes, and on that basis admits, that Harvard is a Massachusetts institution with a principal place of business at 1563 Massachusetts Ave., Cambridge, Massachusetts 02138. 10X lacks sufficient knowledge or information to form a belief as to the truth or falsity of the remaining allegations set forth in Paragraph 5 and on that basis denies them.

6. 10X admits that 10X is a corporation organized and existing under the laws of the State of Delaware. 10X denies that its current principal place of business is 7068 Koll Center

Parkway, Suite 401, Pleasanton, CA, 94566. 10X's principal place of business is at 6230 Stoneridge Mall Road, Pleasanton, CA 94588.

JURISDICTION AND VENUE

7. 10X admits that Plaintiffs purport to bring claims under the patent laws of the United States, Title 35 of the United States Code. Except as expressly admitted, 10X denies each and every allegation and/or legal conclusion set forth in Paragraph 7 of the Complaint.

8. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25. Paragraph 8 of the Complaint states a legal conclusion to which no response is required. To the extent a response is required, 10X admits that this Court has subject matter jurisdiction over this action under Title 28 U.S.C. §§ 1331 and 1338(a).

9. 10X admits that, for the purposes of Counts I and II of the Complaint only, this Court has personal jurisdiction over 10X. 10X admits that it has sold Next GEM products to customers in Massachusetts, including to Harvard. 10X denies that it has sold Next GEM products to Boston University or the University of Massachusetts at Boston. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25. Except as expressly admitted, 10X denies each and every allegation and/or legal conclusion contained in Paragraph 9 of the Complaint.

10. 10X admits that, for the purposes of Counts I and II of the Complaint only, this Court has personal jurisdiction over 10X. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25. 10X admits that Exhibit 20 appears to be a printout of a webpage, titled "10x Single Cell Seminar - Longwood Medical." 10X admits that Paragraph 10 of the Complaint identifies a single seminar that 10X personnel conducted at Longwood Medical in Boston, Massachusetts on September 3, 2019, which included discussion

of 10X's proprietary Next GEM platform. Except as expressly admitted, 10X denies each and every allegation and/or legal conclusion contained in Paragraph 10 of the Complaint.

11. 10X admits that, for the purposes of Counts I and II of the Complaint only, this Court has personal jurisdiction over 10X. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25. 10X admits that it has a written license agreement with Harvard ("Harvard-10X License Agreement"). 10X admits that it contended in *Bio-Rad Labs. Inc. v. 10X Genomics, Inc.*, C.A. No. 19-01699-RGA (D. Del. Dec. 4, 2019), ECF No. 13 ("Delaware Litigation"), that it has an implied license to the 444 and 277 Patents arising from the Harvard-10X License Agreement. 10X admits that the Harvard-10X License Agreement states, *inter alia*, the words recited in the block quote in Paragraph 11 of the Complaint. 10X admits that it asserted that "Harvard's claims under the 444 and 277 Patents are barred at least by an implied license arising from the Harvard-10X License Agreement." Delaware Litigation, ECF No. 13, at 3. 10X further admits that it contended in the Delaware Litigation that the quoted forum selection clause applies to Plaintiffs' causes of action for infringement of the 444 and 277 Patents only. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25. Except as expressly admitted, 10X denies each and every allegation and/or legal conclusion contained in Paragraph 11 of the Complaint.

12. 10X admits that the Complaint purports to base venue on 28 U.S.C. §§ 1391(b) and (c), and 28 U.S.C. § 1400(b). 10X admits that it has a written license agreement with Harvard ("Harvard-10X License Agreement"). 10X admits that it contended in the Delaware Litigation that it has an implied license to the 444 and 277 Patents arising from the Harvard-10X License Agreement. 10X admits that the Harvard-10X License Agreement states, *inter alia*, the words recited in the block quote in Paragraph 11. 10X admits that it asserted that "Harvard's claims under

the 444 and 277 Patents are barred at least by an implied license arising from the Harvard-10X License Agreement." Delaware Litigation, ECF No. 13, at 3. 10X further admits that it contended in the Delaware Litigation that the quoted forum selection clause applies in this present litigation only to Plaintiffs' causes of action for infringement of the 444 and 277 Patents, not the 115 Patent. Except as expressly admitted, 10X denies each and every allegation and/or legal conclusion contained in Paragraph 12 of the Complaint.

13. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

BACKGROUND

14. 10X is without information or knowledge sufficient to form a belief as to the truth of the allegations in Paragraph 14 of the Complaint and, therefore, denies those allegations.

15. 10X is without information or knowledge sufficient to form a belief as to the truth of the allegations in Paragraph 15 of the Complaint and, therefore, denies those allegations.

16. 10X admits Bio-Rad began offering QuantaLife's droplet digital PCR product in 2011 following Bio-Rad's acquisition of QuantaLife. 10X is without information or knowledge sufficient to form a belief as to the truth of the remaining allegations in Paragraph 16 of the Complaint and, therefore, denies those allegations.

17. 10X denies that "Bio-Rad's droplet digital technology was a breakthrough that greatly advanced the capabilities of PCR and NGS." 10X is without information or knowledge sufficient to form a belief as to the truth of the remaining allegations in Paragraph 17 of the Complaint and, therefore, denies those allegations.

18. 10X admits that Bio-Rad's ddSEQ Single-Cell Isolator encapsulates single cells and barcodes into subnanoliter droplets, and that cellular lysis and barcoding of cellular messenger RNA occur in those droplets. 10X admits that Bio-Rad's ddSEQ products are used to generate

libraries that can be used in sequencing for single cell analysis. 10X is without information or knowledge sufficient to form a belief as to the truth of the remaining allegations in Paragraph 18 of the Complaint and, therefore, denies those allegations.

19. 10X is without information or knowledge sufficient to form a belief as to the truth of the allegations in Paragraph 19 of the Complaint and, therefore, denies those allegations.

20. 10X admits, upon information and belief, that Bio-Rad has stated publicly that it has paid $162 million to acquire QuantaLife; that Bio-Rad acquired RainDance Technologies, Inc. ("RainDance"); and that Bio-Rad has stated publicly that it paid $87 million to acquire RainDance. 10X is without information or knowledge sufficient to form a belief as to the truth of the allegations in Paragraph 20 of the Complaint and, therefore, denies those allegations.

21. 10X denies that the technology RainDance licensed from the University of Chicago is "foundational" droplet technology. 10X is without information or knowledge sufficient to form a belief as to the truth of the remaining allegations in Paragraph 21 of the Complaint and, therefore, denies those allegations.

22. 10X admits that 10X Genomics (then 10X Technologies, Inc.) was founded in Pleasanton, California, in 2012, by Dr. Serge Saxonov, Dr. Benjamin Hindson, and Dr. Kevin Ness, who were former employees of QuantaLife and were briefly employed by Bio-Rad after Bio-Rad purchased QuantaLife. 10X denies the remaining allegations in Paragraph 22.

23. 10X admits that it launched its GemCode™ product line in 2015 based on 10X's GemCode™ (or "GEM") technology, a multifaceted and interdisciplinary set of proprietary techniques relating to Gel Beads in Emulsion ("GEMs"). 10X admits that its GemCode™ products can be used with next generation sequencing techniques and can be used to analyze single cells. 10X admits that it launched its Chromium™ product line in 2016 based on 10X's GEM technology.

10X denies any and all remaining allegations and/or legal conclusions set forth in Paragraph 23, and denies that Bio-Rad is entitled to any relief whatsoever.

24. 10X admits that in February 2015, RainDance filed a lawsuit in the District of Delaware accusing 10X's GemCode and Chromium products of infringing several patents. 10X admits that Bio-Rad substituted itself as the Plaintiff in that case. 10X admits that after a November 2018 jury verdict, which included a finding of willful infringement, in August 2018, the Court granted Plaintiffs Bio-Rad and the University of Chicago a permanent injunction. Any execution or enforcement of the judgment is stayed pending completion of any appeal and for thirty days after, and the U.S. Court of Appeals for the Federal Circuit stayed the injunction during the pendency of the appeal to the extent that 10X may continue to sell the Linked-Reads and CNV products subject to the royalty and deposit requirements set forth in Section III of the district court's injunction order. 10X denies the remaining allegations and/or legal conclusions in Paragraph 24.

25. 10X admits that it launched its proprietary Next GEM™ product line in 2019. 10X admits that its proprietary Next GEM™ products include an instrument known as the Chromium Controller and reagent kits for carrying out various genetic analyses, including at least 10X's Chromium Single Cell Gene Expression Solution, Chromium Single Cell Immune Profiling Solution, and Chromium Single Cell ATAC Solution. 10X admits that Exhibit 2 appears to be a brochure, titled "The Power of Massively Parallel Partitioning." 10X admits that Exhibit 3 appears to be a printout of a webpage, titled "The Next GEM Technology." 10X denies any and all remaining allegations and/or legal conclusions set forth in Paragraph 25, and denies that Bio-Rad is entitled to any relief whatsoever.

26. 10X admits that it launched its IPO on September 12, 2019. 10X admits that Exhibit 4 appears to be a SEC Form S-1 Registration Statement for 10x Genomics, Inc. 10X admits that the

Exhibit 4 to the Complaint states, *inter alia*, the words quoted in Paragraph 26. 10X denies any and all remaining allegations and/or legal conclusions set forth in Paragraph 26, and denies that Bio-Rad is entitled to any relief whatsoever.

27. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss, and Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement for all three Counts are also subject to dismissal. ECF Nos. 24-25. 10X denies any and all allegations and/or legal conclusions set forth in Paragraph 27 regarding literal direct infringement of the 444 and 277 Patents, and denies that Bio-Rad is entitled to any relief whatsoever.

COUNT I

28. 10X repeats and incorporates by reference each of its responses to Paragraphs 1 through 27 above.

29. 10X admits that Exhibit 1 appears to be an uncertified copy of the 444 Patent, titled "In vitro evolution in microfluidic systems," which states on its face that it was issued on October 28, 2014. Except as expressly admitted, 10X denies each and every allegation and/or legal conclusion contained in Paragraph 29 of the Complaint.

30. 10X admits that Andrew David Griffiths, David A. Weitz, Darren R. Link, Keunho Ahn, and Jerome Bibette are listed as inventors on the face of the 444 Patent and that Harvard is listed as an assignee on the face of the 444 Patent. Except as expressly admitted, 10X denies each and every allegation and/or legal conclusion contained in Paragraph 30 of the Complaint.

31. 10X lacks sufficient knowledge or information to form a belief as to the truth or falsity of the allegations set forth in Paragraph 31 and on that basis denies them.

32. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25. 10X states that the document attached as Exhibit 5 is not a signed pleading to which 10X is required to respond, or which is amenable to response. 10X further states that Plaintiffs' demand for a response to something that purports to be a claim chart contravenes Local Rule 16.6(d). To the extent that any response is deemed to be required, 10X denies each and every allegation of literal direct infringement in Paragraph 32, denies that Exhibit 5 maps each and every claim element to the Next GEM products under direct literal infringement, and denies any literal direct infringement of any valid, enforceable asserted claim of the 444 Patent.

33. Plaintiffs' allegations of indirect infringement and willful infringement are subject to dismissal. ECF Nos. 24-25.

34. Plaintiffs' allegations of indirect infringement and willful infringement are subject to dismissal. ECF Nos. 24-25.

35. Plaintiffs' allegations of indirect infringement and willful infringement are subject to dismissal. ECF Nos. 24-25.

36. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

37. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

38. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

39. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

40. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

41. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

42. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

43. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

44. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

COUNT II

45. 10X repeats and incorporates by reference each of its responses to Paragraphs 1 through 44 above.

46. 10X admits that Exhibit 14 appears to be an uncertified copy of the 277 Patent, titled "In vitro evolution in microfluidic systems," which states on its face that it was issued on March 20, 2018. Except as expressly admitted, 10X denies each and every allegation and/or legal conclusion contained in Paragraph 46 of the Complaint.

47. 10X admits that Andrew David Griffiths, David A. Weitz, Darren Roy Link, Keunho Ahn, and Jerome Bibette are listed as inventors on the face of the 277 Patent and that Harvard is listed as an assignee on the face of the 277 Patent. Except as expressly admitted, 10X denies each and every allegation and/or legal conclusion contained in Paragraph 47 of the Complaint.

48. 10X lacks sufficient knowledge or information to form a belief as to the truth or falsity of the allegations set forth in Paragraph 48 and on that basis denies them.

49. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25. 10X states that the document attached as Exhibit 16 is not a signed pleading to which 10X is required to respond, or which is amenable to response. 10X further states that Plaintiffs' demand for a response to something that purports to be a claim chart contravenes Local Rule 16.6(d). To the extent that any response is deemed to be required, 10X denies each and every allegation of literal direct infringement in Paragraph 49, denies that Exhibit 16 maps each and every claim element to the Next GEM products under direct literal infringement, and denies any literal direct infringement of any valid, enforceable asserted claim of the 277 Patent.

50. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

51. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

52. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

53. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

54. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

55. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

56. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

57. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

58. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

59. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

60. Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement are subject to dismissal. ECF Nos. 24-25.

COUNT III

61. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

62. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

63. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

64. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

65. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

66. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

67. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

68. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

69. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

70. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

71. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

72. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

73. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

74. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

75. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

76. Bio-Rad's allegations regarding the 115 Patent are subject to dismissal pursuant to 10X's Motions to Dismiss. ECF Nos. 24-25.

RESPONSE TO PLAINTIFFS' PRAYER FOR RELIEF

Plaintiffs' prayer for relief states legal conclusions to which no response is required, but to the extent that a response is required, 10X denies them and specifically asserts that Plaintiffs are not entitled to any of the relief sought in its prayer for relief against 10X. Plaintiffs' prayer for relief should be denied in its entirety, with prejudice, and Plaintiffs should take nothing.

GENERAL DENIAL AND NON-WAIVER

10X denies each and every allegation contained in the Complaint that is not specifically admitted, denied, or otherwise responded to in this Partial Answer. The failure to deny a specific allegation, or assert a specific defense, shall not be deemed an admission of an allegation or a waiver of a defense.

AFFIRMATIVE AND OTHER DEFENSES

Based on the information presently available to it, or information believed to be available after a reasonable opportunity for further investigation and discovery and without assuming the burden of proof or any other burden it would not otherwise have, 10X asserts the defenses identified below in response to Plaintiffs' allegations of literal direct infringement of the 444 and 277 Patents-in-Suit. 10X reserves the right to amend or supplement this Partial Answer with additional defenses as further information is obtained, after the Court rules on 10X's pending motions to dismiss, or Plaintiffs amend their pleadings in response to 10X's pending motion to dismiss under Rule 12(b)(6) of Federal Rules of Civil Procedure. 10X asserts each of these defenses in the alternative, without admitting that 10X is in any way liable to Plaintiffs, that Plaintiffs have been or will be injured or damaged in any way, or that Plaintiffs are entitled to any relief whatsoever.

FIRST DEFENSE
(Non-Infringement)

77. 10X does not and has not infringed any valid and enforceable claim of the 444 and 277 Patents literally. At a minimum, the accused products and activities do not include or practice all the limitations of any independent claim of the 444 and 277 Patents literally.

SECOND DEFENSE
(Invalidity)

78. Each claim of the Asserted Patents is invalid for failure to comply with one or more of the requirements of Title 35 of the United States Code, including, among other sections, Sections 101 *et seq*., including Sections 101, 102, 103, and/or 112, or the Rules and Regulations of the United States Patent & Trademark Office set forth in Title 37 of the Code of Federal Regulations.

THIRD DEFENSE
(Prosecution History Estoppel and/or Prosecution Disclaimer)

79. On information and belief, Plaintiffs' claims of infringement on the 444 and 277 Patents are barred in whole or in part by the doctrines of prosecution history estoppel and/or prosecution disclaimer because of admissions, amendments, or statements made to the United States Patent and Trademark Office during prosecution of the applications leading to, or related to, the issuance of the 444 and 277 Patents.

FOURTH DEFENSE
(Equitable Defenses)

80. On information and belief, Plaintiffs' claims for relief are barred in whole or in part by laches, consent, waiver, estoppel, acquiescence, and/or implied license.

FIFTH DEFENSE
(License)

81. On information and belief, Plaintiffs' claims for relief are barred in whole or in part by the doctrine of express license.

SIXTH DEFENSE
(No Equitable Relief)

82. On information and belief, Plaintiffs are not entitled to equitable relief with respect to the 444 and 277 Patents under any theory because Plaintiffs have not and will not suffer irreparable harm, are not without adequate remedy at law, the balance of the hardships do not favor entry of an injunction, and/or public policy concerns weigh against any equitable relief.

SEVENTH DEFENSE
(Limitation on Damages and Failure to Provide Notice)

83. Plaintiffs' claim for damages for literal direct infringement is limited by 35 U.S.C. §§ 286 and 288 for the 444 Patent or the 277 Patent. Plaintiffs did not provide notice of its infringement allegations to 10X before filing suit, thus limiting any potential damages in this case.

EIGHTH DEFENSE
(Failure to State a Claim)

84. Plaintiffs have failed to state a claim on which relief can be granted.

NINTH DEFENSE
(Failure to Mitigate)

85. Plaintiffs have failed to mitigate damages, if any such damages exist.

TENTH DEFENSE
(Misuse)

86. The claims of the Asserted Patents are unenforceable for patent misuse, including without limitation because Plaintiffs have attempted to impermissibly broaden or extend the scope of the 444 and 277 Patents with anticompetitive effect based upon Plaintiffs' conduct described generally in 10X's counterclaims, which 10X incorporates by reference as though set forth fully herein.

ELEVENTH DEFENSE
(Duplicative Claims)

87. Without admitting that the Complaint states a claim, any remedies Plaintiffs have requested are limited to the extent there is an overlapping or duplicative recovery pursuant to the various claims for any alleged single wrong.

TWELFTH DEFENSE
(Judicial Estoppel)

88. Plaintiffs' claims are barred in whole or in part, based on the doctrine of judicial estoppel, to the extent that Bio-Rad makes arguments in this proceeding that are inconsistent with an argument made in a prior or currently pending proceeding, where Bio-Rad has benefited from that argument in the other proceeding.

THIRTEENTH DEFENSE
(Unclean Hands)

89. Plaintiffs' claims are barred by the doctrine of unclean hands, including based upon Plaintiffs' conduct described in 10X's counterclaims and the foregoing affirmative defenses, which 10X incorporates by reference as though set forth in full herein.

ADDITIONAL DEFENSES

90. 10X reserves all affirmative defenses under Rule 8(c) of the Federal Rules of Civil Procedure, the Patent Laws of the United States, and any other defenses at law or in equity that may now exist or in the future be available based on discovery and further factual investigation in this case, after the Court rules on 10X's pending motions to dismiss, or Plaintiffs amend their pleadings in response to 10X's pending motion to dismiss under Rule 12(b)(6) of Federal Rules of Civil Procedure, including without limitation defenses based on inventorship and/or inequitable conduct.

I. ANTITRUST COUNTERCLAIMS

PARTIES

1. 10X is a Delaware corporation with its principal place of business at 6230 Stoneridge Mall Road, Pleasanton, CA 94588.

2. Bio-Rad is a Delaware corporation with its principal place of business at 1000 Alfred Nobel Drive, Hercules, CA 94547.

JURISDICTION AND VENUE

3. The Court has subject matter jurisdiction over these counterclaims under the antitrust laws including Title 15 of the United States Code, as well as 28 U.S.C. §§ 1331, 1337, and 1367.

4. The Court has personal jurisdiction over Bio-Rad for these counterclaims because Bio-Rad has submitted to the jurisdiction of the Court and because Bio-Rad committed acts and/or omissions related to these counterclaims in this District including Bio-Rad's filing of the present lawsuit itself.

5. Venue is proper in this Court under 15 U.S.C. § 22 and 28 U.S.C. § 1391 because Bio-Rad meets the requirements for venue under the foregoing statutes, including because on information and belief Bio-Rad transacts business in the Commonwealth of Massachusetts and a substantial part of the events or omissions giving rise to the counterclaims occurred in Massachusetts. For example, 10X's counterclaims relate in substantial part to Bio-Rad's acquisition of another company, RainDance Technologies, Inc. ("RainDance"), which had its principal place of business in the Commonwealth of Massachusetts.

INTERSTATE COMMERCE

6. The products at issue in 10X's Counterclaims in this action are sold in interstate commerce and Bio-Rad's unlawful activities alleged in these Counterclaims have occurred in, and have a substantial effect upon, interstate commerce.

INTRODUCTION

7. This case relates to two types of life-science research products used for genetic analysis: droplet-digital polymerase chain reaction ("ddPCR") and Next-Generation Sequencing ("NGS") and specifically NGS sample preparation ("NGS Sample Prep"). These products are described in greater detail below at ¶¶ 41-59.

8. 10X is a pioneering innovator in the area of NGS Sample Prep. 10X came to market with groundbreaking products that dramatically improved the ability to study the genes expressed in large numbers of individual cells. 10X's products have enabled previously unfeasible forms of research in the life sciences in areas of critical importance to human health, including cancer, immune disorders, and other serious diseases. Since 10X was founded, it has made tremendous contributions to scientific understanding.

9. Bio-Rad has engaged in actions to monopolize multiple markets, including markets where 10X is an innovating pioneer. Bio-Rad has committed multiple violations of the United States antitrust laws and California unfair competition law. Bio-Rad's violations include an unlawful acquisition and illegal monopolization, monopoly maintenance, and attempted monopolization of markets related to genetic research products and intellectual property. Bio-Rad's unlawful conduct and its use of illegal, anticompetitive, and exclusionary tactics are ongoing. Bio-Rad did not earn its monopoly by developing innovative products of its own or inventing superior technology. Instead, it obtained that power through an illegal, anticompetitive acquisition.

10. In 2017, Bio-Rad acquired RainDance. This acquisition, and Bio-Rad's subsequent use of the RainDance patents, have violated the antitrust laws in several ways. Specifically, Bio-Rad has harmed competition, attempted to monopolize, or monopolized the following markets: (1) the market for droplet digital polymerase chain reaction ("ddPCR") products ("ddPCR Product Market"), (2) the technology market for genetic analysis on a droplet-based platform ("Droplet Genetic Analysis Technology Market"), and (3) the market for droplet-based products that perform single-cell sample preparation for next generation sequencing ("Droplet Single-Cell Product Market"). Both of the product markets alleged herein are downstream from the Droplet Genetic Analysis Technology Market.

11. First, Bio-Raid has monopolized the ddPCR Product Market through its 2017 acquisition of RainDance. At the time, Bio-Rad was already the dominant firm in the ddPCR product market with, on information and belief, over a 90% share. RainDance was a nascent competitor with, on information and belief, less than a 10% share. The RainDance acquisition thus illegally established or maintained Bio-Rad's monopoly in ddPCR products by eliminating its only real competitor. 10X is a customer that purchases ddPCR products, and has suffered anticompetitive harm from increased prices resulting from Bio-Rad's monopolization of the ddPCR product market.

12. Second, through the RainDance acquisition, Bio-Rad has monopolized or attempted to monopolize the Droplet Genetic Analysis Technology Market. Bio-Rad's acquisition of RainDance's patent portfolio at least substantially lessened competition for the licensing of intellectual property alleged by Bio-Rad to be foundational to droplet-based genetic analysis. Prior to acquiring RainDance, Bio-Rad had already acquired a portfolio of patents that Bio-Rad asserts broadly covers droplet-based genetic analysis. RainDance also held a portfolio of patents that Bio-Rad would later assert as broadly covering the same technology areas. Bio-Rad believed that by

acquiring RainDance's patent portfolio it could monopolize the markets for patent licensing that are upstream of the relevant product markets and charge higher royalties for licensing the aggregated patent portfolio. 10X is a customer in the Droplet Genetic Analysis Technology Market.

13. Third, through the RainDance acquisition, Bio-Rad has monopolized or attempted to monopolize the Droplet Single-Cell Product Market. Bio-Rad asserts that its patents, including the patents that it acquired when buying RainDance, cover technology used as inputs for the products in the Droplet Single-Cell Product Market. Bio-Rad offers its own products in the Droplet Single-Cell Product Market and is attempting to exclude 10X and create a monopoly in this market by refusing to license to 10X the patents it unlawfully acquired and by seeking to enjoin 10X from selling its products. This scheme threatens to significantly reduce competition through the exclusion of Bio-Rad's most significant competitor in the Droplet Single-Cell Product Market.

14. Thus, the acquisition combined two patent portfolios previously held by distinct IP holders, reduced the availability of licenses, increased the would-be price of such licenses, and increased the exclusionary effect of the portfolios by combining them. 10X is a would-be licensee (*i.e.*, a licensing customer) of patents in the Droplet Genetic Analysis Technology Market, which are, according to Bio-Rad's allegations, inputs into 10X's products. Bio-Rad has harmed competition, and 10X has suffered anticompetitive harm, from at least this aspect of the anticompetitive acquisition.

15. Further, Bio-Rad competes in the Droplet Single-Cell Product Market in a way that RainDance did not: While RainDance did not have a product that competed with 10X's single-cell NGS Sample Prep products, at the time when Bio-Rad acquired RainDance, Bio-Rad was releasing its single-cell NGS Sample Prep product. Bio-Rad's product was intended to compete directly with 10X's existing single-cell NGS Sample Prep products. Bio-Rad thus had the incentive to exclude

rivals in the Droplet Single-Cell Product Market, and Bio-Rad's acquisition of RainDance's patents gave Bio-Rad increased opportunities to do so. Bio-Rad competes with 10X in the Droplet Single-Cell Product Market, and 10X is a customer of technological inputs for those products (including patent licenses), and thus has suffered anticompetitive harm from this aspect of the acquisition.

16. When Bio-Rad bought RainDance, it announced that it would expand its product offering with the RainDance products. That was not in fact Bio-Rad's intent. Following the acquisition, Bio-Rad terminated RainDance's competing ddPCR product line and curtailed ongoing research and development efforts for RainDance products. Bio-Rad's purpose in the acquisition was to acquire the patents and use them to maintain or establish monopoly. Since its acquisition of RainDance, Bio-Rad has unlawfully maintained, protected, and expanded its monopoly or market power over the ddPCR Product Market and has sought continually to extend it into adjacent markets, in particular, the Droplet Genetic Analysis Technology Market and Droplet Single-Cell Product Market. Bio-Rad has done so through aggressive litigation (the merits of which 10X disputes) based on its illegally acquired RainDance patents and its illegally aggregated patent portfolio against (1) older generation 10X products and (2) a new generation of 10X products ("Next GEM" products) that use substitute technology specifically designed not to implicate patents that Bio-Rad asserted against 10X prior to the design of Next GEM. Bio-Rad's unlawful acquisition of RainDance has caused harm to 10X, including the harm caused by Bio-Rad's litigation against 10X. Bio-Rad's conduct as a whole is also part of an anticompetitive scheme—including Bio-Rad's unlawful acquisition of RainDance—and the suits Bio-Rad has filed with the wrongly acquired patents are at least part of the way in which Bio-Rad accomplishes its anticompetitive scheme. The suits are also part of how Bio-Rad's anticompetitive acquisition of RainDance harms 10X.

17. BioRad's unlawful conduct has excluded competition, increased prices, and reduced innovation. If left unchecked, Bio-Rad's conduct will continue to reduce the options available to scientists, reduce the quality of the options that remain available, and undermine critical, potentially life-saving scientific research. 10X accordingly asserts these antitrust counterclaims against Bio-Rad.

NATURE OF THE COUNTERCLAIMS

18. We are in the midst of a genomics revolution. This case relates to two distinct technology areas where scientists have made significant strides—ddPCR and NGS. This case concerns both the technology market and the product markets where this technology is used.

19. The first technology area implicated in this case, ddPCR, is a method for determining the quantity of a particular known DNA sequence in genetic material using droplets. ddPCR uses microfluidic chips to divide biological material among numerous tiny droplets, effectively allowing each droplet to be used as though it were a miniature test tube. Each droplet can be checked to determine if it contains the known DNA sequence of interest, thus allowing scientists to calculate the number of DNA molecules with the known sequence in the genetic material.

20. The second technology area implicated in this case is sample preparation for NGS. NGS involves "reading" genetic material. NGS is distinct from ddPCR: whereas ddPCR quantifies the amount of a known sequence in genetic material, NGS is used to read the known or unknown nucleotide sequences in genetic material. NGS Sample Prep involves preparing genetic material for the NGS process. Even though ddPCR and droplet-based single-cell NGS Sample Preparation products are different, both involve the use of microfluidic droplets.

A. Bio-Rad's Acquisition Of RainDance

21. RainDance sold ddPCR products that performed PCR on a droplet-based platform and obtained patents relating to ddPCR. Bio-Rad asserts that these patents also cover 10X's droplet-based NGS Sample Prep products. Years before Bio-Rad bought RainDance, it had already bought another company called QuantaLife, Inc. ("QuantaLife") that developed and sold ddPCR products.

22. If Bio-Rad and RainDance had continued to exist as independent enterprises, they would have competed in multiple ways. First, they would have competed to sell ddPCR products, which in turn would have led to greater innovation, higher quality, and lower prices. Second, they would have competed to license their patents to other companies seeking to sell ddPCR products or droplet-based NGS Sample Prep products. Bio-Rad believed that combining its existing patent portfolio with RainDance's would increase Bio-Rad's negotiating power because it would no longer be possible for licensees to choose between Bio-Rad and another licensor with the RainDance IP. Bio-Rad regarded RainDance's patents as one of the main reasons justifying the acquisition.

23. Following its acquisition of RainDance, on information and belief, Bio-Rad increased prices for ddPCR products. It also terminated RainDance's competing ddPCR product line and curtailed ongoing research and development efforts for RainDance products, demonstrating that the acquisition was designed to eliminate a nascent competitor and to obtain its intellectual property so that nobody else could use it. Bio-Rad has also used its illegally aggregated patent portfolio to exclude competition from the ddPCR Product Market by refusing to license its patents and by charging supracompetitive royalties.

24. Bio-Rad's exclusionary course of conduct aimed at eliminating competition in the ddPCR Product Market did not stop with its acquisition of RainDance. Bio-Rad has recently targeted Stilla Technologies, Inc. ("Stilla"), a more recent entrant marketing products that are part

of the ddPCR Product Market. As of the time of the RainDance acquisition, Stilla was identified as a potential licensee to the RainDance patents, but Bio-Rad now seeks to enjoin Stilla's business.

25. Beyond ddPCR, Bio-Rad's acquisition of RainDance has enabled Bio-Rad's attempted monopolization of the Droplet Single-Cell Product Market. In particular, Bio-Rad is using its illegally aggregated patent portfolio to attempt to eliminate competition.

B. Bio-Rad's Litigation Against 10X

26. 10X is a competitor in the Droplet Single-Cell Product Market.

27. 10X's founders had previously worked at QuantaLife, where they pioneered ddPCR, and for a time worked at Bio-Rad after Bio-Rad bought QuantaLife in 2011. They went on to form the company that became 10X. 10X did not compete with the ddPCR product Bio-Rad had acquired from QuantaLife and, in fact, 10X is a customer of Bio-Rad in the ddPCR Product Market. Instead, 10X introduced products in the Droplet Single-Cell Product Market where Bio-Rad now competes with 10X.

28. As to NGS Sample Prep, 10X invented, pioneered, and sells revolutionary new products in this field, including but not limited to single-cell NGS Sample Prep (i.e., 10X's products in the Droplet Single-Cell Product Market). 10X's revolutionary advances in this field were hard won through intensive interdisciplinary research, and 10X continues to innovate. 10X's innovative technology provides critical tools for genetic researchers to prepare genetic material for NGS in ways that efficiently obtain information that was previously being lost, including information on individual cells.

29. After 10X released its groundbreaking droplet-based single-cell NGS Sample Prep product line, Bio-Rad attempted to move into that same field and launched a years-long campaign to exclude 10X. Bio-Rad launched its single-cell NGS Sample Prep product, which it calls ddSEQ, around the same time as it bought RainDance. Then, armed with a patent portfolio it aggregated

illegally in its unlawful acquisition of RainDance, Bio-Rad engaged in a campaign to exclude competition in the Droplet Single-Cell Product Market.

30. As part of the RainDance acquisition, Bio-Rad took over a lawsuit RainDance had filed against 10X in the District of Delaware (No. 15-cv-152 (D. Del.) ("152 Case")). On information and belief, but for Bio-Rad's illegal acquisition, this litigation was more likely to be resolved with a monetary settlement resulting in a patent license between RainDance and 10X. The terms of this settlement were likely to be more favorable to 10X because the holder of the RainDance IP would have less bargaining power with only those patents than with the combined Bio-Rad and RainDance patent portfolios. Moreover, RainDance and Bio-Rad had different incentives. RainDance had only a limited presence in the product market for ddPCR products (a market in which 10X did not compete in any case) and no product that competed with 10X in single-cell NGS Sample Prep. Thus, RainDance had stronger competitive incentives to agree to competitive licensing terms with companies making single-cell NGS Sample Prep products, such as 10X. RainDance would not have been able rely on the same evidence of competition in the product market that Bio-Rad ultimately relied upon to obtain an injunction order (currently on appeal) against 10X's products; and RainDance would not have been able to obtain such an injunction.

31. Subsequently, Bio-Rad brought a series of additional lawsuits against 10X's products to monopolize the Droplet Single-Cell Product Market. These actions, like Bio-Rad's acquisition of the RainDance patents, were taken with the specific intent to monopolize and there is a dangerous probability that Bio-Rad will monopolize this market if left unchecked.

32. In Mid-2017, following its acquisition of RainDance, Bio-Rad filed a complaint with the United States International Trade Commission (the "ITC"), accusing microfluidic chips in

10X's products of infringing multiple patents that issued from alleged rights that were part of Bio-Rad's portfolio of patents from before the RainDance acquisition. The Commission instituted International Trade Commission Investigation No. 337-TA-1068 (the "1068 Investigation"). In the 1068 Investigation, Bio-Rad sought to exclude from U.S. importation the microfluidic chips then-used in 10X's droplet single-cell products. Bio-Rad also sought to exclude from U.S. importation the microfluidic chips that 10X uses internally to manufacture the gel beads that are used in its NGS Sample Prep products. The Commission's limited exclusion order excludes only the microfluidic chips used in 10X's historical products. The Commission found that the microfluidic chips used in Next GEM design NGS Sample Prep products and 10X's process for manufacturing the gel beads do not infringe the patents asserted in the 1068 Investigation. The Commission's limited exclusion order does not exclude the importation of the microfluidic chips used in 10X's current Next GEM design NGS Sample Prep products. The microfluidic chips in 10X's Next GEM products were designed specifically not to implicate any of the Bio-Rad / RainDance patents that Bio-Rad had previously asserted. The Commission's limited exclusion order likewise does not exclude the importation of chips for 10X's process for manufacturing the gel beads that are used in its NGS Sample Prep Products.

33. Bio-Rad filed two additional lawsuits in the District of Delaware, Case No. 19-cv-1699 (the "1699 Case"), which Bio-Rad subsequently dismissed and refiled as the present case in this Court, as well as Case No. 1:18-01679-RGA (the "1679 Case"), which is currently pending in Delaware. In both of these lawsuits, Bio-Rad has asserted additional patents, including patents it obtained through the RainDance acquisition. In both of these lawsuits, Bio-Rad asserts that 10X's newly designed, current Next GEM products, are infringing. With 10X's motions to dismiss and transfer pending before the District of Delaware, Bio-Rad preemptively dismissed the 1699 Case

and refiled as the present case in this Court in an attempt to forum shop its case on the 115 Patent that Bio-Rad knew 10X contended belonged in the Northern District of California.

34. When Bio-Rad filed the 1699 Case in Delaware it also issued a press release stating that the lawsuit asserted infringement by 10X's newly designed Next GEM products. In that press release, Bio-Rad stated that it would seek injunctive relief against 10X. Bio-Rad took these actions on September 11, 2019, which was the day before 10X's scheduled initial public offering ("IPO"). Bio-Rad's original complaint was carefully timed, having been filed at 3:36 PM, to precede the expected time of 10X's call with the Securities and Exchange Commission to go "effective"—a required step prior to pricing (and trading) an IPO. These SEC calls are regularly scheduled at 4 PM the day before an IPO. Bio-Rad was attempting to use the court filing and Bio-Rad's related press release to disrupt 10X's IPO.

35. Following the Commission's issuance of the Final Determination and remedial orders in the 1068 Investigation, Bio-Rad issued another press release, announcing that it accuses 10X's Next GEM products of infringement in both the 1679 Case and the present case.

36. Bio-Rad has used illegally acquired assets to drive up 10X's costs, and it has cast false aspersions on 10X's reputation in an effort to undermine customer and investor confidence, as well as to tie up the time and attention of many of 10X's key personnel over a period of years. Bio-Rad did all of this to try to eliminate competition and dominate the Droplet Single-Cell Product Market. The cost to 10X of this anticompetitive interference from Bio-Rad's litigation using its illegally acquired assets has been very high, especially relative to 10X's size and revenue.

C. Bio-Rad's Antitrust Violations

37. Bio-Rad's conduct and Bio-Rad's use of the illegally acquired RainDance patents have caused significant harm to competition and antitrust injury to 10X: ***First***, in the ddPCR Product Market, 10X must—like other ddPCR customers—pay supracompetitive prices for ddPCR

products because of Bio-Rad's monopolization. ***Second***, in the Droplet Genetic Analysis Technology Market, 10X—like other potential downstream IP licensees—either cannot obtain licenses or must pay supracompetitive prices for those licenses because Bio-Rad's acquisition of RainDance was an anticompetitive combination of two patent portfolios that would otherwise have been held by competing licensors. ***Third***, 10X—like any other potential participants in the Droplet Single-Cell Product Market—is not able to license Bio-Rad's patents without paying supracompetitive royalties, if at all, because Bio-Rad's acquisition of RainDance was an anticompetitive merger. Because Bio-Rad competed in the downstream product markets, the merger gave Bio-Rad the ability and incentive to exclude rivals in the Droplet Single-Cell Product Market by denying them inputs to those products.

38. Bio-Rad's conduct violates the antitrust laws as follows:

- Bio-Rad's unlawful acquisition of RainDance violated Section 7 of the Clayton Act, 15 U.S.C. § 18, because it substantially lessened competition and tended to create monopoly in the Droplet Single-Cell Product Market, in the ddPCR Product Market, and in the Droplet Genetic Analysis Technology Market.
- Bio-Rad's unlawful acquisition of RainDance and Bio-Rad's subsequent use of its unlawfully aggregated patent portfolio in litigation violate Section 2 of the Sherman Act, 15 U.S.C. § 2, and are acts of monopolization and/or attempted monopolization of the Droplet Genetic Analysis Technology Market.
- Bio-Rad's unlawful acquisition of RainDance and Bio-Rad's subsequent use of its unlawfully aggregated patent portfolio in litigation violate Section 2 of the Sherman Act and are acts of attempted monopolization of the Droplet Single-Cell Product Market.

- Bio-Rad's unlawful acquisition of RainDance violates Section 2 of the Sherman Act, 15 U.S.C. § 2, and are acts of monopolization and/or attempted monopolization of the ddPCR Product Market.
- Bio-Rad's conduct as alleged herein also constitutes unfair competition under § 17200 et seq. of the California Business and Professions Code.

39. Only injunctive relief can fully remedy the anticompetitive harm. Bio-Rad must be ordered to divest the RainDance patents and the licenses acquired through the RainDance acquisition to a third party that will have the incentive to license the patents at competitive rates and that will not have the incentive to foreclose competitors in the Droplet Single-Cell Product Market. Only such a divestiture will remedy the harm Bio-Rad has caused to competition in the Droplet Genetic Analysis Technology Market, the ddPCR Product Market, and the Droplet Single-Cell Product Market.

40. 10X also seeks damages for Bio-Rad's unlawful conduct. First, 10X is entitled to damages for the excessive prices it has paid for ddPCR products. Second, 10X has suffered substantial damages from its inability to license on competitive terms the patents now owned by Bio-Rad in the Droplet Genetic Analysis Technology Market. These damages include lost profits and business opportunities. 10X has also suffered substantial damages as the result of Bio-Rad's litigation tactics using the illegally acquired patents. These costs include not only legal fees, but also lost profits and business opportunities as well as reputational harm.

THE GENETICS RESEARCH TOOLS INDUSTRY

41. Researchers in the life sciences need tools, such as DNA sequencers, to do their work. The provision of such tools is big business: in 2017, life-science researchers spent more than $50 billion on research tools. These researchers are spread across the health ecosystem in non-profit

research centers (such as universities and government entities), pharmaceutical companies, and applied science entities (such as clinical laboratories and hospitals).

42. The research tools industry spans multiple fields in life science, including, among others, genomics, proteomics, and cell biology. Because these fields are characterized by rapid innovation, companies in the research tools industry often license patents to access the technology they need or might be alleged to need in order to develop and sell their products.

43. The products and technologies at issue in this case are among those involved in genetic analysis, and in particular those used (i) to accurately quantify the amount of a known DNA sequence in genetic material using PCR; and (ii) to "read" many known or unknown DNA sequences in genetic material using NGS.

A. Background: Genetic Material

44. DNA contains the hereditary material for living organisms, encoded as a series of particular molecules called nucleotides (or "bases"). DNA is made up of four different nucleotide types that are linked together into two strands that bind each other and together form a double helix. Each nucleotide always bonds with the same complementary partner on the opposite strand (forming "base pairs"), so knowing the sequence of nucleotides on one side of the double helix is sufficient to provide the full sequence of nucleotides for the other side of the double helix.

45. In cells, a strand of DNA is copied to make a strand of RNA containing the complementary sequence. The sequence of nucleotides in RNA is used to make proteins through a process called "translation," and those proteins do much of the work in the cell. The sequence of base pairs is a code that dictates functions of life. The DNA genome will contain the common code that is used throughout the organism. The collection of RNA molecules in a cell corresponds to the specific proteins made in that cell.

B. ddPCR—Accurately Quantifying Known DNA Sequences

46. Techniques were developed to achieve the goal of providing an accurate quantification of a specific, known sequence of DNA in some given genetic material. Common techniques for this rely on the polymerase chain reaction ("PCR"). PCR is a biological method that uses a repeating cycle of steps to make exponential numbers of copies of DNA. PCR involves heating and cooling the DNA repeatedly in a device called a thermal cycler. By using PCR in combination with detection techniques scientists can tell whether a sequence is present in some genetic material.

47. More advanced techniques use PCR to tell not just whether a sequence of DNA or RNA is present, but also to estimate how many instances of that sequence are present in some genetic material. One such technique is called real-time PCR. This method involves running PCR and measuring the amount of DNA after each heating/cooling cycle. Scientist can use the collected data to estimate the relative initial amount of DNA in the genetic material.

48. Another technique for determining the amount of DNA in the genetic material is digital PCR ("dPCR"). This technique involves dividing a solution containing DNA into many sub-units and then running PCR reactions on the sub-units. Some sub-units will react and others will not. The fact that each sub-unit is either reactive or not for a given sequence is what gives this technique the name "digital." Counting the number of reactive sub-units allows scientists to calculate the number of nucleic acid molecules with a given sequence in genetic material.

49. QuantaLife, which was acquired by Bio-Rad, used microfluidic droplets as the sub-units for dPCR. QuantaLife's ddPCR products included "consumables" (such as microfluidic chips and reagents) that are used once as well as dedicated bench-top devices used with those consumables to create and collect data from the droplets. The products divided a water-based solution containing DNA into many microscopic water droplets suspended in oil (a "water-in-oil

emulsion"). Each droplet also contains the reagents necessary to run a PCR reaction. The droplets are formed in a device called a droplet generator. The emulsion with the droplets is then transferred to a thermal cycler (a standard laboratory device used for PCR that was not proprietary to QuantaLife), which performs the heating and cooling cycle necessary to run the PCR reaction. The droplets are then transferred to another device (a droplet reader), which detects the presence or absence of a known DNA sequence. Software analyzes the results to count the number of positive droplets and can provide an absolute quantification of nucleic acids in the starting genetic material. QuantaLife obtained patents related to digital PCR in droplets. QuantaLife called its product ddPCR (droplet digital PCR).

50. In the summer of 2011, QuantaLife began selling its ddPCR products commercially. These products included both devices like the droplet generator and droplet reader and the consumables (microfluidic chips and reagents) used in the devices. QuantaLife's products proved to be commercially viable, and Bio-Rad purchased the company in the Fall of 2011.

51. In 2013, RainDance launched a ddPCR product called "RainDrop" that competed with the ddPCR products that Bio-Rad sold following its acquisition of QuantaLife. Like QuantaLife, RainDance sold two devices (a droplet generator and a droplet reader) and consumables. At the time, Bio-Rad was already the dominant firm in the ddPCR product market with over a 90% share. RainDance was a nascent competitor with less than a 10% share.

52. Also, RainDance had a patent portfolio including both patents naming its employees as inventors and patents that it had licensed from others. RainDance's patents related to PCR amplification of nucleic acids within droplets. In 2015, RainDance's regulatory filings stated that it had "secured exclusivity through owned patents and in-licensing in critical droplet technologies such as droplet generation, merging fluids into droplets, libraries of droplets and

sequence enrichment. Additionally, we have proprietary positions in the core functionality of our RainDrop dPCR platform that is common to a variety of applications. . . . The scope of our patent portfolio provides us with a significant competitive advantage over potential competitors in our target markets."

C. Next Generation DNA Sequencers—"Reading" Many DNA Sequences

53. While PCR-based techniques were developed to accurately quantify the amount of known DNA sequences, different techniques and technology have been developed to allow researchers to "read" many known or previously unknown sequences of nucleotides in parallel.

54. DNA sequencing generally is the process of determining the order of the nucleotides or base pairs in DNA. There are several technological approaches to sequencing DNA. Given the rapidly evolving nature of the DNA sequencing industry, it is common for those developing techniques to sequence DNA to seek patent protection for proprietary sequencing-related technologies. The first techniques for DNA sequencing came about in the 1970s in the work of biochemist Frederick Sanger and in the 1980s, biotech companies developed commercially-sold devices that implemented Sanger's technique. These first-generation sequencers are called "Sanger sequencers."

55. In the 2000s, companies began to develop "next generation" sequencing ("NGS") techniques that use a high-throughput approach that sequenced many segments of DNA at once. Each individual sequence determined was typically short, and so longer DNA strands typically have been broken up into many smaller pieces for sequencing. By sequencing large numbers of DNA strands in parallel, NGS has increased the speed of sequencing while lowering the cost per nucleotide. NGS does not require the researcher to specify in advance a particular nucleic acid sequence to be examined in an experiment. NGS can "read" a previously unknown sequence of

nucleotides and requires no initial information from the researcher regarding the sequences that are being "read."

D. The 10X Innovations

56. After working at Bio-Rad for a time after the QuantaLife acquisition, individuals from QuantaLife left Bio-Rad, eventually founding the company that became 10X. 10X does not make ddPCR products. Instead, it has created new products that use novel applications of microfluidic droplets, gel beads, and barcodes to prepare genetic material for use in next-generation sequencers.

57. 10X's initial product line involved "linked long-read" genome sequencing. It can be challenging to sequence an entire genome of an organism because it is extremely lengthy or determine whether multiple sequences are in a single strand of DNA. When using NGS, copies of the genome need to be divided into very short strands. The resulting short sequences must then be computationally put back together, with assistance from specialized computer software. 10X developed proprietary technology using gel beads with releasably attached barcodes in droplets that allowed researchers to group multiple shorter sequences together, simplifying the computational task of reassembling the entire genome or identifying multiple sequences that were together in the same strand of DNA.

58. 10X also developed a range of applications for single-cell NGS analysis using its groundbreaking approach of placing gel beads with releasably attached barcodes in droplets, including, for example, analyses of DNA, RNA, protein, and epigenetics. In particular, 10X developed technology to use microscopic gel beads, each of which has millions of copies of a unique DNA "barcode" that are attached to it. Those gel beads are placed in droplets together with cells (which contain nucleic acids), and the barcodes are released from the gel beads within the droplets. Those barcodes are used to associate nucleic acid sequences with a single cell.

59. 10X's products allow researchers to efficiently investigate biological function on a cell-by-cell basis using NGS, instead of being limited to tissues or collections of cells. This innovation has numerous practical applications. For example, researchers are now learning that tumors are not always composed of exact copies of the same cell but are sometimes made up of cells with different genomes. 10X's products allow researchers to investigate these differences.

RELEVANT MARKETS

60. As stated above, this case concerns three relevant antitrust markets: (1) the ddPCR Product Market, (2) the Droplet Genetic Analysis Technology Market, and (3) the Droplet Single-Cell Product Market. The two product markets are downstream from the Droplet Genetic Analysis Technology Market.

A. Product Markets

1. The ddPCR Product Market

61. ddPCR products are systems for performing ddPCR analysis. A primary function of ddPCR products is quantification of a specific, known sequence of DNA in a given genetic material.

62. While some older products, in particular real-time PCR and non-droplet-based dPCR products, can also quantify a given DNA or RNA sequence in a unit of genetic material, customers do not view them as reasonable substitutes for ddPCR. ddPCR is the vast majority of the dPCR field. Real-time PCR is generally viewed as inferior to ddPCR in accuracy, sensitivity, and ease of use.

63. Because consumers of ddPCR products do not see other products as reasonable substitutes, they would need to continue to purchase ddPCR products even if their price increased substantially. Thus, a monopolist of ddPCR products could profitably impose a small but significant

and non-transitory increase in price on consumers above the price in a competitive market. In fact, on information and belief, Bio-Rad did increase prices after acquiring RainDance.

64. The market for ddPCR products is at least nationwide.

65. Bio-Rad is a competitor in the market for ddPCR products and controls in excess of 90% of that market. On information and belief, Stilla is the only other meaningful competitor in the ddPCR Product Market and it has only single-digit market share. Bio-Rad is seeking to exclude Stilla by suing it for patent infringement.

66. 10X is a customer in the market for ddPCR products and has purchased ddPCR products from Bio-Rad including during the time following Bio-Rad's acquisition of RainDance.

2. The Market for Droplet Single-Cell Products

67. Within the genetics research-tools industry, NGS Sample Prep products are used to prepare samples for particular next-generation sequencing applications.

68. One area of research that requires tailored NGS Sample Prep tools is single-cell analysis. In conventional genetic research, DNA and RNA strands from multiple cells are analyzed together. But recognizing that different cells in a population may have different sets of genes being expressed (that is, actively being used to make protein), scientists have begun to develop single-cell techniques (*i.e.,* techniques that allow observation of differences among cells). This demand for single-cell analysis has created a market for droplet-based single-cell NGS Sample Prep products, *i.e.*, the Droplet Single-Cell Product Market. By dividing the population of cells among droplets that can be automatically processed and analyzed, researchers can perform tasks that they cannot perform cost-effectively with other products. Droplet-based single-cell NGS Sample Prep allows scientists to divide individual cells into droplets for cell-by-cell processing before the genetic material is further processed for use in machines that sequence DNA. For example, single cell sequencing in droplets allows researchers to efficiently process large numbers of cells for NGS.

Lower throughput processing methods are not an adequate substitute for high-throughput droplet-based methods.

69. For these reasons and others, many researchers that use droplet-based single-cell NGS Sample Prep products would not see other products as reasonable substitutes and would continue to purchase droplet-based single-cell NGS Sample Prep products despite a substantial increase in price. For example, Bio-Rad's Executive Vice President and President, Life Science Group, Annette Tumolo, has claimed that it is not practical to do single cell NGS analysis without using droplets. A hypothetical monopolist of droplet-based single-cell NGS Sample Prep products could therefore profitably impose a small but significant and non-transitory increase in price on consumers above the price in a competitive market.

70. The market for droplet-based single-cell NGS Sample Prep products is at least nationwide.

71. 10X is a lead innovator in this market. Bio-Rad competes in this market by marketing its ddSEQ single-cell sequencing products. Bio-Rad markets its products performing two of the types of analysis performed by 10X's products: single-cell RNA sequencing and single-cell assay for transposase-accessible chromatin ("ATAC"). 10X's products also perform sample prep for additional NGS-based analysis not supported by the Bio-Rad products, thereby providing 10X's customers with more options, and Bio-Rad does not compete for those additional types of NGS-based analysis. 10X and Bio-Rad together provide the majority of all products in the market for droplet-based single-cell NGS Sample Prep products.

B. Droplet Genetic Analysis Technology Market

72. To make and market droplet-based genetic analysis products, an entity must be able to practice the technologies underlying such products. For example, Bio-Rad has claimed that the intellectual property acquired from RainDance encompasses a wide range of biological reactions in

droplets with potential applications in life science research and clinical research, including NGS applications. Any new entrant into the product market for droplet-based genetic analysis would need to either license proprietary technologies invented by an existing manufacturer/rights-holder or invent its own, non-infringing technologies. Thus, the Droplet Genetic Analysis Technology Market includes patents asserted to cover technology related to droplet-based genetic analysis.

73. A hypothetical monopolist in the Droplet Genetic Analysis Technology Market could profitably impose a small but significant and non-transitory increase in price of that technology above the price in a competitive market.

74. Bio-Rad alleges that it has broad rights concerning droplet-based genetic analysis technology. These allegations, if true, would mean that Bio-Rad would be a monopolist in this market. Further demonstrating that Bio-Rad believes it is a monopolist, Bio-Rad believed that its aggregation of the Bio-Rad and RainDance patent portfolios would allow it to charge higher royalties because consumers in the technology market (*i.e.*, would-be licensees) would have no ability to choose to license from the RainDance IP holder rather than from Bio-Rad.

75. The Droplet Genetic Analysis Technology Market is nationwide.

76. 10X is both a competitor and a customer in this market. 10X is a competitor because it is an innovator in the Droplet Single-Cell Product Market and 10X owns patents in this field that are developed by its own employees. But 10X has also licensed patents in this market and could potentially have settled with RainDance and licensed the RainDance patents but for Bio-Rad's illegal acquisition; and 10X is also a customer in this market.

BIO-RAD'S UNLAWFUL ACQUISITION OF RAINDANCE

77. In January 2017, Bio-Rad acquired RainDance. The main purpose of the acquisition was to acquire the RainDance patents and eliminate competition. Bio-Rad's acquisition of RainDance was illegal and anticompetitive and substantially lessened competition in multiple

relevant antitrust markets. In addition, the acquisition was part of Bio-Rad's attempt to monopolize and/or monopolization of those markets and was part of a scheme whose purpose was to do the same. After acquiring RainDance, Bio-Rad subsequently terminated RainDance's products, curtailed its research and development, and used the illegally acquired patents in litigation in the furtherance of that same scheme and to monopolize or attempt to monopolize multiple relevant antitrust markets.

A. ddPCR Product Market

78. Following RainDance's release of its ddPCR product offering, RainDance was a small nascent competitor in the ddPCR Product Market. At that time, customers interested in using ddPCR could purchase ddPCR products from either RainDance or Bio-Rad.

79. Bio-Rad purchased RainDance in January 2017, eliminating competition in the ddPCR Product Market. After the acquisition, there was no other competitive manufacturer producing ddPCR products.

80. Prior to the RainDance acquisition, Bio-Rad's Annette Tumolo publicly stated that the acquisition of RainDance's ddPCR products would strengthen Bio-Rad's position in digital PCR. Bio-Rad also stated publicly that it welcomed the opportunity to expand its product offering with RainDance's products and technologies, and Bio-Rad stated that there would be combined droplet-based solutions.

81. However, Bio-Rad's actual purpose with the acquisition was to eliminate RainDance as a competitive threat. Since the acquisition, Bio-Rad has eliminated RainDance's research-and-development efforts, and all but eliminated RainDance's product line (except for the temporary provision of products and service for existing customers). Bio-Rad's trial counsel has represented that Bio-Rad's Annette Tumolo articulated Bio-Rad's plan for RainDance as: buy the

company, disable the products, stop selling them, maybe provide support to a few people, and get out of the business.

B. Droplet Genetic Analysis Technology Market

82. RainDance and Bio-Rad were also competitors in the Droplet Genetic Analysis Technology Market. Both Bio-Rad and RainDance have asserted that their intellectual property covers a broad range of droplet-based genetic analysis including 10X's products.

83. Bio-Rad believed acquiring RainDance would reduce licensing competition and reduce uncertainty about the licensing fees it could charge by eliminating the risk of competing with another holder of the RainDance patent portfolio.

84. As a result of Bio-Rad's aggregation of these two separate patent portfolios, competition for patent licensing has been substantially lessened. In effect, Bio-Rad's goal was that anyone seeking to commercially develop products that perform genetic analysis using droplets would have to seek a license from Bio-Rad and would have no competitive alternative.

85. Bio-Rad's acquisition of RainDance was part of a pattern of Bio-Rad's behavior of acquiring other competitors to aggregate their patents and eliminate competition in technology markets. For example, in 2014, Bio-Rad acquired GnuBio, a company developing a droplet-based sequencing workflow, and aggregated its patents with those of Bio-Rad.

86. The anticompetitive effects of Bio-Rad's RainDance acquisition in the Droplet Genetic Analysis Technology Market are exemplified by the fact that, before the acquisition, it was more likely that 10X could have obtained a monetary settlement with a license to the RainDance portfolio on competitive terms, whereas post-acquisition, Bio-Rad has refused to negotiate a license on competitive terms and has obtained a damages award in the 152 Case that (if upheld) represents a substantially increased royalty over the expected royalty had the patents been licensed by RainDance or another entity lacking Bio-Rad's specific incentives. Both the damages award and

the injunction, which are currently subject to appeal, are the direct result of Bio-Rad's unlawful acquisition of RainDance. The anticompetitive effects are further exemplified by Bio-Rad's (incorrect) assertions that the aggregated patent portfolio not only blocks 10X from using the technology in its historical product offerings but also blocks 10X from using the substitute product designs it created to avoid further allegations of infringement by Bio-Rad on the patents Bio-Rad asserted in its first wave of patent lawsuits.

87. As a result of Bio-Rad's illegal acquisition of RainDance, a competitor seeking to enter or remain in any of the product markets downstream from the technology market where Bio-Rad sought to assert monopoly power would face costly barriers to entry, including: (1) the thicket of patents ostensibly covering these areas created by the RainDance acquisition, which requires innovators to obtain costly licenses or face the task of inventing newly designed products that are not alleged to be infringing; and (2) costly patent litigation premised on these patent thickets and the elimination of RainDance as alternative for licensing technology.

88. Bio-Rad's acquisition of RainDance also substantially lessened competition and tended to create monopoly with respect to patent licenses that, if Bio-Rad's assertions have merit, cover patents that constituted technological inputs for those seeking to develop and manufacture NGS Sample Prep and other products. This reduction in competition increased cost and risk those seeking to use droplet-based technology, and this increased cost and risk could lead some companies to abandon the use of such technology altogether. Bio-Rad has subsequently used the combined QuantaLife and RainDance patent portfolios to attempt to exclude competitors for both ddPCR and NGS-related products.

89. Another example concerns Stilla, a company that more recently attempted to enter the ddPCR Product Market. Bio-Rad has sued Stilla for patent infringement in this Court, seeking to use its illegally acquired patent assets to protect its monopoly in the ddPCR Product Market.

90. Another example is Bio-Rad's litigation campaign against 10X in an attempt to exclude 10X from the Droplet Single-Cell Product Market and monopolize that market like it has ddPCR.

91. Even though ddPCR and 10X's technology are very different, after 10X was founded, Bio-Rad asserted that it held rights over the range of droplet-based genetic analysis platforms, including 10X's. Bio-Rad embarked on a years-long campaign to keep 10X and its products under a permanent cloud of litigation. Bio-Rad implemented this campaign by filing and/or maintaining the numerous litigations described above based on its aggregated patent portfolio. Among the assets Bio-Rad acquired from RainDance was the 152 Case, which RainDance had filed against 10X. As explained above, RainDance, or a buyer other than Bio-Rad, would not have been able to obtain the same relief Bio-Rad received in that case (currently on appeal) and there is a higher probability that 10X would have been able to obtain a monetary settlement of the ongoing litigation and a license to the RainDance patents but for the anticompetitive acquisition. Bio-Rad, however, used the assets of the unlawful acquisition to exclude certain of 10X's products and to attempt to monopolize the Droplet Single-Cell Product Market.

92. Bio-Rad did not stop there. 10X expended significant time and money developing newly designed products with similar functionality that have not been determined to be infringing. After obtaining its injunction against 10X's older products (in part by telling the Court that 10X's new products negated concerns about issuing such an injunction), Bio-Rad took aim at 10X's newly designed products both in the present action (and in the 1699 Case) and the 1679 Case. These new

actions also represent Bio-Rad's use of the illegally acquired RainDance assets to attempt to monopolize the Droplet Single-Cell Product Market as well as the upstream Droplet Genetic Analysis Technology Market. Bio-Rad's use of the illegally acquired RainDance patents is at once part of the harm that 10X has suffered as a consequence of Bio-Rad's illegal acquisition and also a part of Bio-Rad's attempt to monopolize the multiple markets alleged herein.

93. Additionally, Bio-Rad's violation of the antitrust laws by its unlawful acquisition of RainDance is part of an illegal scheme the purpose of which is to lessen competition and monopolize the multiple markets alleged herein. Bio-Rad's lawsuits, including those utilizing the illegally acquired assets are also a part of the same scheme. Bio-Rad's unlawful acquisition of RainDance has also caused harm to 10X through the litigation based on the acquired patent rights.

94. Additionally, on information and belief, Bio-Rad brought these lawsuits based on the illegally acquired RainDance patents for the purpose of keeping its competitor 10X under a constant cloud of litigation. The patents Bio-Rad has asserted in these actions do not reflect its own innovations but are patents or patent applications to which it gained access through the QuantaLife and RainDance portfolios. This campaign of litigation is designed to use Bio-Rad's unlawful aggregation of the RainDance patent portfolio with its then-existing portfolio to intimidate, weaken, exclude, and/or acquire 10X and to prevent 10X from competing in the Droplet Single-Cell Product Market.

BIO-RAD'S ATTEMPT TO MONOPOLIZE THE DROPLET SINGLE-CELL PRODUCT MARKET

95. In 2017, Bio-Rad launched its ddSEQ, droplet based single-cell NGS sample prep product, and more recently launched ATAC-Seq application and consumables that are also used on the ddSEQ instrument.

96. Bio-Rad has a specific intent to monopolize the Droplet Single-Cell Product Market and exclude 10X from this market. Today, 10X is the largest manufacturer in the Droplet Single-Cell Product Market, while Bio-Rad has a smaller market share. But Bio-Rad's litigation campaign is designed to give Bio-Rad monopoly power over the Droplet Single-Cell Product Market by using its illegally aggregated market power to exclude 10X from this market. Bio-Rad seeks to do this either by driving 10X out of the market or by acquiring 10X and assuming 10X's market share as its own. Indeed, Annette Tumolo recently stated to 10X employees that 10X and Bio-Rad were one or two rulings away from being part of the same company.

97. Indeed, Bio-Rad has claimed that competition with 10X is depressing prices in the marketplace. Bio-Rad's claim confirms that Bio-Rad will raise its prices if it succeeds at excluding 10X.

98. Bio-Rad has since filed three additional lawsuits (with two still pending), including this one, the 1699 Case (now dismissed), and the 1679 Case, alleging that 10X's redesigned products, Next GEM, should also be enjoined.

99. The timing of Bio-Rad's 1699 Case demonstrates Bio-Rad's specific intent to exclude 10X. As already noted, Bio-Rad filed that lawsuit and put out a press release announcing the lawsuit, and announcing that it would seek to enjoin 10X's Next GEM product line, on the very day that 10X's initial public offering was priced and the offering documents declared effective by the U.S. Securities & Exchange Commission. Indeed, Bio-Rad filed the case hurriedly in the District of Delaware, the wrong forum, with the intent to derail 10X's IPO and for the purpose of excluding 10X and impairing competition by interfering with 10X's planned IPO.

100. Bio-Rad's specific intent to monopolize is also demonstrated by its inconsistent representations to different courts. In the present case and the 1679 Case in Delaware, Bio-Rad

seeks an injunction against 10X's newly designed Next GEM products, and Bio-Rad has publicized the fact that it is seeking to enjoin Next GEM. But Bio-Rad previously obtained an injunction order and a limited exclusion order against 10X's older products in the 152 and 1068 Cases, arguing that the commercial availability of 10X's new Next GEM products meant that excluding or enjoining 10X's products would not create public interest issues. For example, the Commission in the 1068 Investigation determined that 10X's technology platform enabled research including that related to cancer (the second leading cause of death in the United States) and heart disease (the leading cause of death in the United States). Relying on the commercial availability of the Next GEM chips, the Commission concluded that the remedial orders it issued would not harm the public interest.

101. In addition to reflecting intent to monopolize, Bio-Rad's conduct, taken as a whole, forms an anticompetitive scheme. Each part of this scheme independently caused the anticompetitive harms described herein. Bio-Rad's suits using its wrongfully acquired patents are part of the way in which Bio-Rad accomplishes its anticompetitive scheme. Bio-Rad's unlawful acquisition of RainDance has also caused harm to 10X through the litigation based on the acquired patent rights, including the present litigation.

102. There is a dangerous probability that Bio-Rad could, through its continued litigation including the use of its illegally acquired assets, substantially weaken 10X as a competitor and exclude 10X from the market and thus obtain monopoly power in the Droplet Single-Cell Product Market.

HARM TO COMPETITION

103. Through its unlawful acquisition of RainDance and other exclusionary conduct, Bio-Rad has harmed competition.

104. First, Bio-Rad's acquisition of RainDance eliminated competition in the ddPCR Product Market. Bio-Rad has since used its monopoly power in the ddPCR Product Market to raise

prices. Specifically, prices for ddPCR consumables have increased, which has directly harmed purchasers in the ddPCR Product Market, including 10X. Further, by eliminating RainDance's ddPCR product line, Bio-Rad has reduced the number of distinct options available to customers in the ddPCR Product Market. Bio-Rad has also used its control of technology upstream from the ddPCR Product Market in an attempt to exclude Stilla from the ddPCR Product Market.

105. Bio-Rad has also harmed competition using its monopoly power in the market for technology related to genetic analysis on a droplet platform that sits upstream from the ddPCR Product Market and, according to Bio-Rad's allegations, upstream from the Droplet Single-Cell Product Market. Were it not for the RainDance acquisition, Bio-Rad and RainDance would have competed to license this technology. Instead, Bio-Rad has insisted on increased license fees, refused to license its technology, or both. The imposition of supracompetitive licensing costs or the refusal to license patents in Bio-Rad's illegally aggregated patent portfolio further excludes competition and increases barriers to entry.

106. Bio-Rad has used its acquisition of RainDance and its illegally aggregated patents to seek to exclude 10X from the Droplet Single-Cell Product Market.

107. Consumers in these product markets have been and will be harmed by Bio-Rad's efforts to exclude its competitors, facing higher prices and lower-quality products. 10X is the lead innovator in the NGS prep space. Exclusion of 10X from the market and Bio-Rad's attempt to monopolize or actual monopolization of those product markets has resulted in increased prices for products that the scientific community has come to depend upon, increased cost and restricted options to enter or remain in the market for potential competitors, slower pace of innovation, reduction of quality of product offerings, and a restriction of choices.

ANTITRUST INJURY TO 10X

108. Bio-Rad's anticompetitive conduct has directly harmed 10X as a result of the reduction in competition in each of the relevant markets.

109. First, 10X is a customer in the ddPCR Product Market. 10X has thus suffered harm from the increase in prices since the RainDance acquisition.

110. Second, 10X has suffered substantial damages as a result of Bio-Rad's anticompetitive acquisition of the RainDance patent portfolio and the lessening of competition in the Droplet Genetic Analysis Technology Market. Bio-Rad's aggregation of RainDance's assets with its own enabled Bio-Rad to increase the price to 10X of licensing the RainDance patents, deny 10X a license altogether that it was more likely to obtain through litigation settlement with RainDance, and reduce 10X's opportunities to identify new designs or substitute technologies that it could license.

111. Third, 10X has suffered substantial damages as a result of Bio-Rad's attempted monopolization of the Droplet Single-Cell Product Market. Because of Bio-Rad's refusal to settle the RainDance litigation on the competitive terms that 10X was more likely to have obtained from RainDance without the merger, 10X had to develop costly new designs for droplet-based single-cell NGS Sample Prep products. 10X also incurred significant costs to defend against Bio-Rad's litigation including based on the illegally acquired RainDance patent portfolios. These include legal fees as well as business opportunities and profits that 10X has lost because its executives and employees are occupied by litigation and because of the effects of the litigation and statements about it in the marketplace. If Bio-Rad had not unlawfully acquired RainDance, 10X could have pursued monetary settlement with RainDance, and licensing RainDance's patent portfolio would have meant that Bio-Rad would not have been able to charge many multiples of the competitive licensing prices. Nor would RainDance have been able to obtain an injunction because that

injunction was based on alleged competition between 10X's products and Bio-Rad's products and not on any alleged competition with RainDance.

112. At present, Bio-Rad has obtained an injunction order in the 152 Case (asserting RainDance patents) that 10X is appealing and a Limited Exclusion Order in the 1068 Investigation (asserting patents that issued from alleged rights that Bio-Rad acquired before the RainDance acquisition) that is still subject to presidential review as well as appeal. Both of those pending forms of injunctive relief are aimed at keeping 10X's historical products off the market and both of those decisions were premised in part on the existence of 10X's newly designed substitute products, Next GEM, being available in the market. Bio-Rad argued this would address the public interest concerns associated with enjoining 10X's products. Bio-Rad's current litigations in the present case and in the District of Delaware use RainDance-acquired patents to seek to exclude those same Next GEM products. Exclusion or potential exclusion of those products in either the present lawsuit or Bio-Rad's lawsuit in Delaware reflects antitrust injury to 10X because it flows directly from the anticompetitive nature of the RainDance acquisition and the aggregation of the RainDance portfolios in Bio-Rad's hands.

113. Exclusion or potential exclusion of 10X's Next GEM products in either the present lawsuit or Bio-Rad's lawsuit in Delaware reflects antitrust injury to 10X because it flows directly from the anticompetitive nature of the RainDance acquisition and the aggregation of the RainDance portfolios in Bio-Rad's hands. Likewise, an injunction against 10X's historical products in the 152 Case reflects antitrust injury to 10X because it likewise flows directly from the anticompetitive nature of the RainDance acquisition and the aggregation of the RainDance portfolios in Bio-Rad's hands. Further, 10X has suffered antitrust injury due to Bio-Rad's acquisition of RainDance because of Bio-Rad's incentive, as a competitor in the Droplet Single-Cell Product Market, to inflate

licensing rates or deny licenses altogether to foreclose competitors in the Droplet Single-Cell Product Market. Bio-Rad was placed in a position to act on that incentive when it acquired RainDance and has so acted against 10X.

COUNT I
(Unlawful Acquisition in Violation of Section 7 of the Clayton Act, 15 U.S.C. § 18) (Droplet Single-Cell Product Market)

114. 10X hereby re-alleges and incorporates by reference the allegations set forth in paragraphs 1 through 113 above.

115. Bio-Rad's acquisition of RainDance had the effects, and continues to have the effects, of substantially lessening competition and tending to create a monopoly in the Droplet Single-Cell Product Market.

116. Unless Bio-Rad is required to divest the RainDance patent portfolio to a third party willing and able to license those patents at competitive rates and/or rates not inflated by the incentive to foreclose competitors in the Droplet Single-Cell Product Market, its acquisition of RainDance will continue to have at least the following anticompetitive effects in the Droplet Single-Cell Product Market:

(a) excluding or threatening to exclude competitors with superior products for droplet-based single-cell NGS Sample Prep;
(b) reducing innovation in droplet-based single-cell NGS Sample Prep products.

117. In the absence of such injunctive relief, 10X will suffer irreparable harm in the form of being forced to continue to divert time and resources from its business to oppose Bio-Rad's lawsuits that are brought based on illegally acquired patents, being denied patent licensing opportunities that are either necessary or alleged to be necessary so that 10X can market and sell its products in the foregoing product market, and to the extent that Bio-Rad's suits are not ultimately defeated on their merit and that Bio-Rad is allowed to have injunctive relief in such lawsuits (all of

which 10X opposes), exclusion from the Droplet Single-Cell Product Market, and reduction of competition by eliminating a superior and more efficient competitor with no corresponding economic justification.

COUNT II
(Unlawful Acquisition in Violation of Section 7 of the Clayton Act, 15 U.S.C. § 18) (Droplet Genetic Analysis Technology Market)

118. 10X hereby re-alleges and incorporates by reference the allegations set forth in paragraphs 1 through 117 above.

119. Bio-Rad's acquisition of RainDance had the effects, and continues to have the effects, of substantially lessening competition and tending to create a monopoly in the Droplet Genetic Analysis Technology Market for genetic analysis on a droplet platform.

120. Unless Bio-Rad is required to divest the RainDance patent portfolio to a third party willing and able to license those patents at competitive rates and/or rates not inflated by the incentive to foreclose competitors in the Droplet Single-Cell Product Market, its acquisition of RainDance will continue to have at least the following anticompetitive effects in the Droplet Genetic Analysis Technology Market:

(a) excluding or threatening to exclude competitors with superior technology for droplet-based single-cell NGS Sample Prep or droplet-based genetic analysis;

(b) reducing innovation in droplet-based single-cell NGS Sample Prep products.

121. In the absence of such injunctive relief, 10X will suffer irreparable harm in the form of being forced to continue to divert time and resources from its business to oppose Bio-Rad's lawsuits that are brought based on illegally acquired patents, being denied patent licensing opportunities that are either necessary or alleged to be necessary so that 10X can market and sell its products, and to the extent that Bio-Rad's suits are not ultimately defeated on their merit and

that Bio-Rad is allowed to have injunctive relief in such lawsuits (all of which 10X opposes), exclusion from the Droplet Single-Cell Product Market as well.

COUNT III
(Attempted Monopolization of Droplet Single-Cell Product Market in Violation of Section 2 of the Sherman Act, 15 U.S.C. § 2)

122. 10X hereby re-alleges and incorporates by reference the allegations set forth in paragraphs 1 through 121 above.

123. Bio-Rad has engaged in predatory or anticompetitive conduct, including:

(a) Unlawfully acquiring RainDance and the RainDance patent portfolio.

(b) Refusing to license its patent portfolios at reasonable rates, or at all.

(c) Using that portfolio to file patent litigation against actual or potential competitors seeking to use technology for genetic analysis on a droplet platform.

124. Bio-Rad had a specific intent to monopolize the markets for Droplet Single-Cell Product Market.

125. Through its conduct, Bio-Rad has created a dangerous probability of achieving monopoly power in each of the foregoing product market.

126. As a direct and proximate cause of Bio-Rad's conduct, 10X has suffered irreparable harm including: suffering the cost, distraction and lost opportunities arising from having to defend against Bio-Rad's patent-infringement lawsuits; and being less able to continue to develop and sell droplet-based single-cell NGS Sample Prep products. In the event that Bio-Rad is ultimately able to win on the merits of its lawsuits, which 10X disputes, 10X will suffer the additional harm of being forced to pay supracompetitive royalties on illegally acquired patents and/or being excluded from the Droplet Single-Cell Product Market.

127. 10X and others will continue to suffer such irreparable harm absent appropriate injunctive relief.

COUNT IV
(Monopolization or Attempted Monopolization or Monopoly Maintenance of the Droplet Genetic Analysis Technology Market in Violation of Section 2 of the Sherman Act, 15 U.S.C. § 2)

128. 10X hereby re-alleges and incorporates by reference the allegations set forth in paragraphs 1 through 127 above.

129. Bio-Rad seeking to defend the present injunction order and/or damages award in the 152 Case, and/or obtain injunctive or damages relief against Next GEM in this or another lawsuit alleging infringement by Next GEM, notwithstanding that 10X disputes the merits of any and all such injunctive relief, is an attempt by Bio-Rad to possess monopoly power in the Droplet Genetic Analysis Technology Market.

130. Bio-Rad willfully attempted to acquire that monopoly power and/or obtained that power and/or maintained that power through its acquisition of RainDance, not as a consequence of its superior products, business acumen, or historic accident. To the extent that Bio-Rad defends the injunction or damages award in the 152 Case successfully and/or successfully obtains injunctive or damages relief against Next GEM, Bio-Rad will have established such monopoly.

131. To the extent that Bio-Rad does not already have such power, there is a dangerous probability that Bio-Rad will succeed at obtaining such monopoly power because if Bio-Rad's lawsuits are successful at forcing 10X to in effect pay licensing royalties (in the form of damages) or be enjoined from selling both its historical products and its Next GEM products then Bio-Rad will in effect have obtained monopolistic market share for the Droplet Single-Cell Product Market downstream from the Droplet Genetic Analysis Technology Market where Bio-Rad seeks to obtain or maintains monopoly power.

132. As a direct and proximate cause of Bio-Rad's conduct, 10X has suffered and/or will suffer irreparable harm including: suffering the cost, distraction and lost opportunities arising from

having to defend against Bio-Rad's patent-infringement lawsuits; being less able to continue to develop and sell droplet-based single-cell NGS Sample Prep products; and being excluded from the Droplet Single-Cell Product Market.

133. 10X and others will continue to suffer such irreparable harm absent appropriate injunctive relief.

COUNT V
(Unlawful Acquisition in Violation of Section 7 of the Clayton Act, 15 U.S.C. § 18)
(ddPCR Products)

134. 10X hereby re-alleges and incorporates by reference the allegations set forth in paragraphs 1 through 133 above.

135. Bio-Rad's acquisition of RainDance had the effects, and continues to have the effects, of substantially lessening competition and tending to create a monopoly in the ddPCR Product Market.

136. Unless Bio-Rad is required to divest RainDance and its assets, Bio-Rad's acquisition of RainDance will continue to have at least the following anticompetitive effects in the ddPCR Product Market:

(a) raising prices that consumers must pay for ddPCR products;

(b) reducing innovation in ddPCR products.

137. In the absence of such injunctive relief, 10X will suffer irreparable harm in the form of paying supracompetitive prices for ddPCR products.

COUNT VI
(Monopolization or Monopoly Maintenance of ddPCR Product Market in Violation of Section 2 of the Sherman Act, 15 U.S.C. § 2)

138. 10X hereby re-alleges and incorporates by reference the allegations set forth in paragraphs 1 through 137 above.

139. Bio-Rad possesses monopoly power in the ddPCR Product Market.

140. Bio-Rad willfully acquired and/or maintained that monopoly power through its acquisition of RainDance, not as a consequence of its superior products, business acumen, or historic accident, and continues to maintain that monopoly power through its anticompetitive use of the unlawfully acquired RainDance patent portfolio.

141. As a direct and proximate cause of Bio-Rad's conduct, 10X has suffered harm including: paying supracompetitive prices for ddPCR devices and consumables; suffering the cost, distraction and lost opportunities arising from having to defend against Bio-Rad's patent-infringement lawsuits; and being less able to continue to develop and sell droplet-based single-cell NGS Sample Prep products.

142. 10X and others will continue to suffer such irreparable harm absent appropriate injunctive relief.

COUNT VII
(Unfair Competition in Violation of California Business & Professions Code § 17200 et seq.)

143. 10X hereby re-alleges and incorporates by reference the allegations set forth in paragraphs 1 through 142 above.

144. Bio-Rad has engaged in Unfair Competition under § 17200 et seq. of the California Business and Professions Code (UCL) by engaging in unlawful and unfair conduct. Bio-Rad's unlawful and unfair conduct has harmed competition in California and elsewhere and threatens significant harm to competition in the future. Bio-Rad's conduct is the direct and proximate cause of injury to California consumers and to 10X.

145. Bio-Rad has engaged in unlawful conduct in violation of the UCL, including based on the conduct alleged above that also violates Section 2 of the Sherman Act and Section 7 of the Clayton Act. Bio-Rad's unfair conduct threatens an incipient and continuing violation of the antitrust laws and also violates the policy and spirit underlying those laws because the effects of

Bio-Rad's conduct are comparable to or the same as violations of those laws, or because Bio-Rad's conduct otherwise significantly harms competition. Bio-Rad's unfair competition includes multiple acts any of which alone, and any combination of which, is sufficient to show a violation of the UCL including at least the following:

(a) Unlawfully acquiring RainDance and the RainDance patent portfolio so as to deny would-be licensees including 10X the opportunity to license those patents at all or at non-supracompetitive rates and for the purpose of denying necessary inputs to its competitors including 10X.

(b) Using an illegally and unfairly acquired portfolio to file patent litigation against actual or potential competitors including 10X for the purpose of harming competition and excluding competitors including 10X.

(c) Attempting to monopolize and/or monopolizing the antitrust markets as alleged herein.

146. These acts constitute violations of the UCL (and antitrust laws) as alleged herein *supra* and at the very least significantly threaten or harm competition in the Droplet Single-Cell Product Market and the Droplet Genetic Analysis Technology Market.

147. These acts have caused harm to competition in at least the ways alleged in the foregoing paragraphs.

148. 10X has suffered harm as a direct, proximate, and foreseeable result of Bio-Rad's actions alleged herein. Such harm includes but is not limited to needing to divert resources from its business to oppose Bio-Rad's lawsuits that are brought based on illegally acquired patents, being denied patent licensing opportunities that are either necessary or alleged to be necessary so that

10X can market and sell its products, and being excluded or being threatened with exclusion from the relevant markets. Harm suffered by 10X is further detailed in the foregoing paragraphs.

149. California consumers have been harmed and are threatened with continued harm as a direct, proximate, and foreseeable result of Bio-Rad's unlawful and unfair actions. Bio-Rad's unlawful and unfair conduct has already harmed researchers in California who rely upon 10X's NGS sample prep products. These researchers are threatened with a reduced rate and/or increased cost of scientific discovery in areas where they use 10X products. This harm to California consumers is not limited to the scientific community, but likely extends to the medical community and the community at large who depend upon the pace of scientific discovery for advances toward treating and curing critical illnesses.

150. 10X seeks an Order of this Court permanently enjoining Bio-Rad's unlawful and unfair business practices as alleged herein and other relief the Court deems appropriate.

151. 10X and others will continue to suffer such irreparable harm absent appropriate injunctive relief.

II. DECLARATORY JUDGMENT COUNTERCLAIMS

Counterclaim Plaintiff 10X hereby alleges declaratory judgment counterclaims against Bio-Rad and Harvard. 10X has moved to dismiss Plaintiffs' venue allegations regarding U.S. Patent No. 10,190,115 (the "115 Patent") as well as Count III alleging infringement of the 115 Patent. ECF Nos. 24-25. Further, pursuant to Rule 12(b)(6) of the Federal Rules of Civil Procedure, 10X has also moved to dismiss Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement in all three Counts for failure to state a claim. *Id*. 10X is not answering the Complaint above, or alleging declaratory judgment counterclaims here with respect to any of the specific grounds set forth in 10X's Motions to

Dismiss, and 10X is also not making any admissions with respect to any of those allegations in the Complaint.

NATURE OF ACTION

152. These are counterclaims for declarations of non-infringement, invalidity, and/or unenforceability of one or more claims of U.S. Patent Nos. 8,871,444 (the "444 Patent"), and 9,919,277 (the "277 Patent").

PARTIES

153. Counterclaim Plaintiff 10X is a Delaware corporation with its principal place of business at 6230 Stoneridge Mall Road, Pleasanton, CA 94588.

154. Counterclaim Defendant Bio-Rad is a Delaware corporation with its principal place of business at 1000 Alfred Nobel Drive, Hercules, CA 94547.

155. Counterclaim Defendant Harvard is a Massachusetts institution with a principal place of business at 1563 Massachusetts Ave., Cambridge, Massachusetts 02138.

JURISDICTION AND VENUE

156. This is an action for declaratory judgment of non-infringement and invalidity of the 444 and 277 Patents arising under the patent laws of the United States, 35 U.S.C. § 1, et seq., and the Declaratory Judgment Act, 28 U.S.C. §§ 2201-2202. An actual case and controversy exists under the Declaratory Judgment Act because Counterclaim Defendants Bio-Rad and Harvard have sued 10X asserting that each of the 444 and 277 Patents is valid, enforceable, and infringed by 10X, and Counterclaim Plaintiff 10X either has moved to dismiss or denies Counterclaim Defendants' allegations. This Court has subject matter jurisdiction over these Counterclaims pursuant to 28 U.S.C. § 1331 and 1338(a), in combination with 28 U.S.C. §§ 2201-2202.

157. Personal jurisdiction and venue in this District over Counterclaim Defendants are proper for the purposes of Counts I and II of the Complaint only. Pursuant to Rule 12(b)(3) of the

Federal Rules of Civil Procedure, 10X has moved to dismiss Plaintiffs' venue allegations regarding U.S. Patent No. 10,190,115 (the "115 Patent") as well as Count III alleging infringement of the 115 Patent. ECF Nos. 24-25.

BACKGROUND

158. On December 18, 2019, Counterclaim Defendants filed a Complaint against 10X, asserting infringement of two patents, U.S. Patent Nos. 8,871,444 ("the 444 Patent") and 9,919,277 ("the 277 Patent"). Counterclaim Defendants allege in the Complaint that United Kingdom Research and Innovation ("UKRI") and Harvard are the owners of the 444 Patent and the 277 Patent and that Bio-Rad is an exclusive licensee of these patents.

159. In their Complaint, Counterclaim Defendants have expressly accused 10X of infringing the 444 and 277 Patents in Counts I and II of the Complaint. 10X has either moved to dismiss or denied the allegations of Counts I and II.

160. As a result of Counterclaim Defendants' actions and statements, including the filing of the Complaint, an actual and justiciable controversy exists between 10X and Counterclaim Defendants with regard to the validity and infringement of the 444 and 277 Patents.

161. A judicial declaration and determination is necessary and appropriate at this time given Counterclaim Defendants' allegations and in order that 10X may ascertain its rights and duties with respect to the 444 and 277 Patents.

COUNT VIII
(Declaratory Judgment of Non-Infringement of U.S. Patent No. 8,871,444)

162. 10X restates and incorporates by reference the denials, admissions, allegations, and Affirmative Defenses contained in its Partial Amended Answer and Counterclaims above as if fully set forth herein. 10X further restates and incorporates by reference its allegations in paragraphs 152 through 161 of its Declaratory Judgment Counterclaims.

163. In their Complaint, Counterclaim Defendants have expressly accused 10X of infringing the 444 Patent.

164. 10X has not been and is not now directly and literally infringing any valid and enforceable claim of the 444 Patent. For the 444 Patent, 10X has moved to dismiss Plaintiffs' allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement. ECF Nos. 24, 25. 10X is not answering the Complaint or alleging declaratory judgment counterclaims with respect to any of the specific grounds set forth in 10X's Motions to Dismiss, and thus 10X is not making any admissions with respect to any of those allegations in the Complaint.

165. 10X's manufacture, use, sale, offer for sale, and/or importation into the United States of the Next GEM platform does not directly and literally infringe, any valid and enforceable claim of the 444 Patent at least because neither 10X nor anyone else has used or uses 10X's Next GEM platform to practice each and every step of the method of the only independent claim of the 444 Patent, claim 1. For example, neither 10X nor anyone else used or uses 10X's Next GEM platform such that (1) the "microcapsules" are "aqueous" and that "a portion of the plurality of microcapsules contact each other but do not fuse with each other," and (2) "the product of the enzymatic reaction" is "detect[ed]".

166. Additionally, each of the claims of the 444 Patent is invalid as set forth below in Count IX of 10X's Declaratory Judgment Counterclaims. An invalid claim cannot be infringed.

167. In light of the Complaint against 10X, there exists an actual controversy between Counterclaim Defendants and 10X regarding the 444 Patent. Accordingly, a valid and justiciable controversy has arisen and exists between Counterclaim Defendants, Harvard and Bio-Rad, and 10X with respect to the alleged infringement of the 444 Patent. 10X desires a judicial determination

and declaration of the respective rights and duties of the parties herein. Such a determination and declaration is necessary and appropriate at this time so that the parties may ascertain their respective rights and duties.

168. 10X is entitled to a declaratory judgment that: (a) it has not directly and literally infringed, and is not directly and literally infringing, any valid and enforceable claim of the 444 Patent, and (b) it is not liable for any alleged direct and literal infringement of the 444 Patent.

COUNT IX
(Declaratory Judgment of Invalidity of U.S. Patent No. 8,871,444)

169. 10X restates and incorporates by reference the denials, admissions, allegations, and Affirmative Defenses contained in its Partial Amended Answer and Counterclaims above as if fully set forth herein. 10X further restates and incorporates by reference its allegations in paragraphs 152 through 168 of its Declaratory Judgment Counterclaims.

170. 10X contends that the claims of the 444 Patent are invalid for failure to comply with the conditions for patentability, including, but not limited to, 35 U.S.C. §§ 101, 102, 103, and/or 112.

171. For example, the asserted claims of the 444 Patent are invalid under Section 102 and/or 103 in view of at least U.S. Patent No. 7,129,091 ("Ismagilov 091"), Exhibit A. Ismagilov 091 was filed on May 9, 2003. These exemplary disclosures also apply to U.S. Patent Pub. No. 2005/0272159 ("Ismagilov 159"), Exhibit B, which was published from the same patent application as Ismagilov 091 and contains the same disclosures.

172. Ismagilov 091 teaches, for example,

> A plug-forming region generally comprises a junction between a plug-fluid inlet and a channel containing the carrier-fluid such that plugs form which are substantially similar in size to each other and which have cross-sections which are substantially similar in size to the cross-section of the channel in the plug-forming region. In one embodiment, the substrate may contain a plurality of plug-forming regions.

Ismagilov 091 at 14:44-51; *see also* Ismagilov 159 ¶ 108.

173. Ismagilov 159 also teaches, for example,

> Suitable carrier-fluids include oils, preferably fluorinated oils. Examples include viscous fluids, such as perfluorodecaline or perfluoroperhydrophenanthrene; nonviscous fluids such as perfluorohexane, and mixtures thereof (which are particularly useful for matching viscosities of the carrier-fluids and plug-fluids). Commercially available fluorinated compounds such as Fluorinert™ liquids (3M, St. Paul, Minn.) can also be used.

Ismagilov 091 at 20:37-44; *see also* Ismagilov 159 ¶ 145.

174. Ismagilov 091 also teaches, for example,

> For example, fluorinated surfactants, such as those with a hydrophilic head group, are preferred when the carrier-fluid is a fluorinated fluid and the plug-fluid is an aqueous solution.

Ismagilov 091 at 20:64-67; *see also* Ismagilov 159 ¶ 147.

175. Ismagilov 159 also teaches, for example,

> Fluorosurfactants terminated with OEG-groups have been shown to demonstrate biocompatibility in blood substitutes and other biomedical applications. Preferably, oil-Soluble fluoroSurfactants terminated with oligoethylene groups are used to create interfaces in the microfluidic devices in certain applications. Surfactants with well-defined composition may be Synthesized. This is preferably followed by the characterization of the formation of aqueous plugs in the presence of those Surfactants. Their inertness towards nonspecific protein adsorption will also be characterized. FIG. 24 shows examples of fluorinated surfactants that form monolayers that are: resistant to protein adsorption; positively charged; and negatively charged. For OEG-terminated surfactants, high values of n (≧16) are preferred for making these surfactants oil-soluble and preventing them from entering the aqueous phase. In FIG. 24, compounds that have between about 3 to 6 EG units attached to a thiol are sufficient to prevent the adsorption of proteins to a monolayer of thiols on gold, and are thus preferred for inertness. In addition, surfactants that have been shown to be biocompatible in fluorocarbon blood substitutes may also be used as additives to fluorinated carrier fluids.

Ismagilov 091 at 37:23-44 (highlighting added); *see also* Ismagilov 159 ¶ 233.

176. Dr. Ismagilov, who is the first named inventor of Ismagilov 091, testified at trial before the District of Delaware, that the same sentence as that highlighted above in the previous

paragraph in a patent related to the 091 Ismagilov was emphasizing the use of surfactants that are highly stable:

> Q. . . . Now, I've highlighted the sentence that says, For OEG-terminated surfactants high values of N, N greater than or equal to 16, are preferred for making these surfactants oily soluble and preventing them from entering the aqueous phase. Can you explain for the jury how this sentence that I've highlighted in the patent relates to the two features that we discussed in --
>
> A. Yes. So we're emphasizing that the longer fluorinated tails are preferred in this chemistry, and they would be useful for creating droplets, biological reactions with ***high stability*** and high performance.

Bio-Rad Laboratories, Inc. et al. v. 10X Genomics, Inc., Civil Action 15-152-RGA (D. Del. Nov. 5, 2018) ("152 Case") Ismagilov Trial Testimony at 222:18-223:9 (emphasis added), Exhibit C (excerpted).

177. Ismagilov 091 also teaches, for example,

> The merged plugs 122 may undergo further merging or undergo splitting, or they may be directed to other channels, channel branches, area, or region of the substrate where they may undergo one or more reactions or "treatments" such as one or more types of characterizations, measurements, detection, sorting, or analysis.

Ismagilov 091 at 27:58-64; *see also* Ismagilov 159 ¶ 180; *see also id.* ¶¶ 72, 186.

178. Ismagilov 091 also teaches, for example,

> Autocatalytic reactions present an exciting opportunity for highly sensitive detection of minute amounts of autocatalysts. Several systems are known to operate on this principle, silver-halide photography being the most widely used. In silver-halide photography, the energy of photons of light is used to decompose an emulsion of silver halide AgX into nanometer-sized particles of metallic silver. A film that is embedded with the silver particles is then chemically amplified by the addition of a metastable mixture of a soluble silver(I) salt and a reducing agent (hydroquinone). Metallic silver particles catalyze reduction of silver(I) by hydroquinone, leading to the growth of the initial silver particles. Another example of an autocatalytic reaction is the polymerase-chain reaction (PCR), which is a very effective amplification method that has been widely used in the biological sciences.

Ismagilov 091 at 45:57-46:5; *see also* Ismagilov 159 ¶ 276.

179. Ismagilov 091 further disclosed that "[t]he term 'detection region' refers to a part of or a location in a substrate or channel wherein a chemical is identified, measured, or sorted based on a predetermined property or characteristic." Ismagilov 091 at 7:61-64; *see also* Ismagilov 159 at ¶ 66. *See also, e.g.*, Ismagilov 091 at 20:60-67, 26:37-58, 37:5-17, 38:41-55, 51:49-52:4, Fig. 10A; Ismagilov 159 at ¶¶ 147, 174, 231, 0239, 316, Fig. 10A.

180. 10X is informed and believes, and on that basis alleges, that Counterclaim Defendants contend that the 444 Patent is valid and enforceable.

181. Accordingly, a valid and justiciable controversy has arisen and exists between Counterclaim Defendants, Harvard and Bio-Rad, and 10X with respect to the validity of the 444 Patent. 10X desires a judicial determination and declaration of the respective rights and duties of the parties herein. Such a determination and declaration is necessary and appropriate at this time so that the parties may ascertain their respective rights and duties.

182. 10X is entitled to a declaratory judgment that the claims of the 444 Patent are invalid.

COUNT X
(Declaratory Judgment of Non-Infringement of U.S. Patent No. 9,919,277)

183. 10X restates and incorporates by reference the denials, admissions, allegations, and Affirmative Defenses contained in its Partial Amended Answer and Counterclaims above as if fully set forth herein. 10X further restates and incorporates by reference their allegations in paragraphs 152 through 182 of its Declaratory Judgment Counterclaims.

184. In their Complaint, Counterclaim Defendants have expressly accused 10X of infringing the 277 Patent.

185. 10X has not been and is not now directly and literally infringing any valid and enforceable claim of the 277 Patent. For the 277 Patent, 10X has moved to dismiss Plaintiffs'

allegations of direct infringement under the doctrine of equivalents, indirect infringement, and willful infringement. ECF Nos. 24, 25. 10X is not answering the Complaint or alleging declaratory judgment counterclaims with respect to any of the specific grounds set forth in 10X's Motions to Dismiss, and thus 10X is not making any admissions with respect to any of those allegations in the Complaint.

186. 10X's manufacture, use, sale, offer for sale, and/or importation into the United States of the Next GEM platform does not directly and literally infringe any valid and enforceable claim of the 277 Patent at least because neither 10X nor anyone else has used or uses 10X's Next GEM platform to practice each and every step of the method of the only independent claim of the 277 Patent, claim 1. For example, neither 10X nor anyone else used or uses 10X's Next GEM platform such that (1) the "microcapsules" are "aqueous" and that "a portion of the plurality of microcapsules contact each other but do not fuse with each other," (2) "a genetic element [is] linked covalently or non-covalently to a bead" when the "droplet generator [] produce[s], under microfluidic control, a plurality of aqueous microcapsules", and (3) "a genetic element [is] linked covalently or non-covalently to a bead" when "the enzymatic reaction" is "conduct[ed] … on the genetic element of at least one of the plurality of microcapsules".

187. Additionally, each of the claims of the 277 Patent is invalid as set forth below in Count XI of 10X's Declaratory Judgment Counterclaims. An invalid claim cannot be infringed.

188. In light of the Complaint against 10X, there exists an actual controversy between Counterclaim Defendants and 10X regarding the 277 Patent. Accordingly, a valid and justiciable controversy has arisen and exists between Counterclaim Defendants, Harvard and Bio-Rad, and 10X with respect to the alleged infringement of the 277 Patent. 10X desires a judicial determination and declaration of the respective rights and duties of the parties herein. Such a determination and

declaration is necessary and appropriate at this time so that the parties may ascertain their respective rights and duties.

189. 10X is entitled to a declaratory judgment that: (a) it has not directly and literally infringed, and is not directly and literally infringing, any valid and enforceable claim of the 277 Patent, and (b) it is not liable for any alleged direct and literal infringement of the 277 Patent.

COUNT XI
(Declaratory Judgment of Invalidity of U.S. Patent No. 9,919,277)

190. 10X restates and incorporates by reference the denials, admissions, allegations, and Affirmative Defenses contained in its Partial Amended Answer and Counterclaims above as if fully set forth herein. 10X further restates and incorporates by reference their allegations in paragraphs 152 through 189 of its Declaratory Judgment Counterclaims.

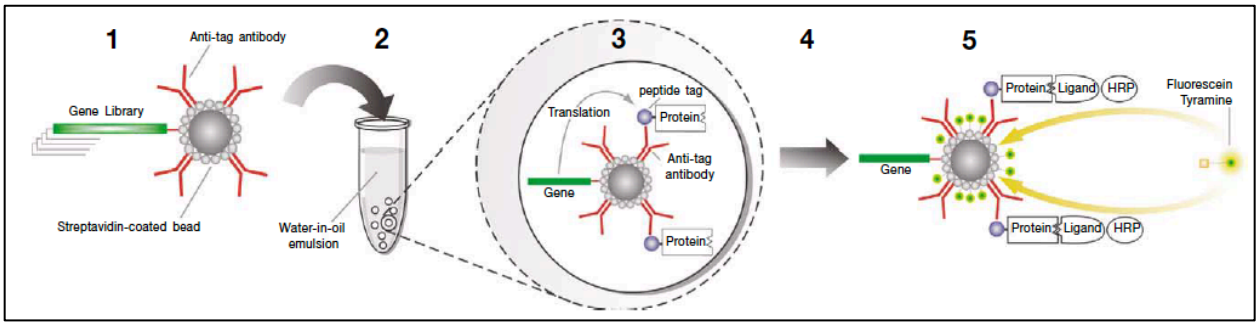
191. 10X contends that the claims of the 277 Patent are invalid for failure to comply with the conditions for patentability, including, but not limited to, 35 U.S.C. §§ 101, 102, 103, and/or 112, especially in light of the scope of Plaintiffs' current infringement allegations.

192. For example, the asserted claims of the 277 Patent are invalid under at least 35 U.S.C. § 103, in view of at least Sepp A, Tawfik DS, Griffiths AD, Microbead display by in vitro compartmentalisation: selection for binding using flow cytometry, FEBS Letters 532: 455–458 (2002) ("Sepp 2002"), Exhibit D, and further in view of U.S. Patent No. 7,129,091 ("Ismagilov 091"), Exhibit A. These exemplary disclosures also apply to U.S. Patent Pub. No. 2005/0272159 ("Ismagilov 159"), which was published from the same patent application as Ismagilov 091 and contains the same disclosures. Sepp 2002 was published at least by 2002. Ismagilov 091 was filed May 9, 2003

193. Sepp 2002 teaches, for example:

> A repertoire of genes encoding protein variants, each with a common N- or C-terminal epitope tag, are linked to streptavidin-coated beads carrying antibodies

that bind the epitope tag at, on average, ≤1 gene per bead (1). The beads are compartmentalised in a water-in-oil emulsion to give, on average, <1 bead per compartment (2), and transcribed and translated in vitro in the compartments. Consequently, in each compartment, multiple copies of the translated protein become attached to the gene that encodes it via the bead (3). The emulsion is broken (4), and the microbeads carrying the display library isolated. The beads are incubated with ligand coupled to horseradish peroxidase (HRP), washed to remove unbound ligand and incubated with hydrogen peroxide and fluorescein tyramide (5). Immobilised HRP converts the fluorescein tyramide into a short-lived, free-radical intermediate which reacts with adjacent proteins. Hence, beads displaying proteins that bind ligand become labelled with multiple fluorescein molecules. These beads can then be enriched (together with the genes attached to them) by flow cytometry.



Sepp 2002 at 456, Fig. 1.

194. Ismagilov 091 teaches, for example,

A plug-forming region generally comprises a junction between a plug-fluid inlet and a channel containing the carrier-fluid such that plugs form which are substantially similar in size to each other and which have cross-sections which are substantially similar in size to the cross-section of the channel in the plug-forming region. In one embodiment, the substrate may contain a plurality of plug-forming regions.

Ismagilov 091 at 14:44-51; *see also* Ismagilov 159 ¶ 108.

195. Ismagilov 159 also teaches, for example,

Suitable carrier-fluids include oils, preferably fluorinated oils. Examples include viscous fluids, such as perfluorodecaline or perfluoroperhydrophenanthrene; nonviscous fluids such as perfluorohexane, and mixtures thereof (which are particularly useful for matching viscosities of the carrier-fluids and plug-fluids). Commercially available fluorinated compounds such as Fluorinert™ liquids (3M, St. Paul, Minn.) can also be used.

Ismagilov 091 at 20:37-44; *see also* Ismagilov 159 ¶ 145.

196. Ismagilov 091 also teaches, for example,

> For example, fluorinated surfactants, such as those with a hydrophilic head group, are preferred when the carrier-fluid is a fluorinated fluid and the plug-fluid is an aqueous solution.

Ismagilov 091 at 20:64-67; *see also* Ismagilov 159 ¶ 147.

197. Ismagilov 159 also teaches, for example,

> Fluorosurfactants terminated with OEG-groups have been shown to demonstrate biocompatibility in blood substitutes and other biomedical applications. Preferably, oil-Soluble fluoroSurfactants terminated with oligoethylene groups are used to create interfaces in the microfluidic devices in certain applications. Surfactants with well-defined composition may be Synthesized. This is preferably followed by the characterization of the formation of aqueous plugs in the presence of those Surfactants. Their inertness towards nonspecific protein adsorption will also be characterized. FIG. 24 shows examples of fluorinated surfactants that form monolayers that are: resistant to protein adsorption; positively charged; and negatively charged. For OEG-terminated surfactants, high values of n (≧16) are preferred for making these surfactants oil-soluble and preventing them from entering the aqueous phase. In FIG. 24, compounds that have between about 3 to 6 EG units attached to a thiol are sufficient to prevent the adsorption of proteins to a monolayer of thiols on gold, and are thus preferred for inertness. In addition, surfactants that have been shown to be biocompatible in fluorocarbon blood substitutes may also be used as additives to fluorinated carrier fluids.

Ismagilov 091 at 37:23-44 (highlighting added); *see also* Ismagilov 159 ¶ 233.

198. Dr. Ismagilov, who is the first named inventor of Ismagilov 091, testified at trial before the District of Delaware, that the same sentence as that highlighted above in the previous paragraph in a patent related to the 091 Ismagilov was emphasizing the use of surfactants that are highly stable:

> Q. . . . Now, I've highlighted the sentence that says, For OEG-terminated surfactants high values of N, N greater than or equal to 16, are preferred for making these surfactants oily soluble and preventing them from entering the aqueous phase. Can you explain for the jury how this sentence that I've highlighted in the patent relates to the two features that we discussed in --
>
> A. Yes. So we're emphasizing that the longer fluorinated tails are preferred in this chemistry, and they would be useful for creating droplets, biological reactions with ***high stability*** and high performance.

Bio-Rad Laboratories, Inc. et al. v. 10X Genomics, Inc., Civil Action 15-152-RGA (D. Del. Nov. 5, 2018) ("152 Case") Ismagilov Trial Testimony at 222:18-223:9 (emphasis added), Exhibit C (excerpted).

199. Ismagilov 091 also teaches, for example,

> The merged plugs 122 may undergo further merging or undergo splitting, or they may be directed to other channels, channel branches, area, or region of the Substrate where they may undergo one or more reactions or "treatments" such as one or more types of characterizations, measurements, detection, sorting, or analysis.

Ismagilov 091 at 27:58-64; *see also* Ismagilov 159 ¶ 180; *see also id.* ¶¶ 72, 186.

200. Ismagilov 091 also teaches, for example,

> Autocatalytic reactions present an exciting opportunity for highly sensitive detection of minute amounts of autocatalysts. Several systems are known to operate on this principle, silver-halide photography being the most widely used. In silver-halide photography, the energy of photons of light is used to decompose an emulsion of silver halide AgX into nanometer-sized particles of metallic silver. A film that is embedded with the silver particles is then chemically amplified by the addition of a metastable mixture of a soluble silver(I) salt and a reducing agent (hydroquinone). Metallic silver particles catalyze reduction of silver(I) by hydroquinone, leading to the growth of the initial silver particles. Another example of an autocatalytic reaction is the polymerase-chain reaction (PCR), which is a very effective amplification method that has been widely used in the biological sciences.

Ismagilov 091 at 45:57-46:5; *see also* Ismagilov 159 ¶ 276

201. Ismagilov 091 further disclosed that that the "[t]he term 'detection region' refers to a part of or a location in a substrate or channel wherein a chemical is identified, measured, or sorted based on a predetermined property or characteristic." Ismagilov 091 at 7:61-64; *see also* Ismagilov 159 at [0066]. Ismagilov 159 at [0066]. *See also, e.g.*, Ismagilov 091 at 20:60-67, 26:37-58, 37:5-17, 38:41-55, 51:49-52:4, Fig. 10A; Ismagilov 159 at ¶¶ 147, 174, 231, 239, 316, Fig. 10A.

202. 10X is informed and believes, and on that basis alleges, that Counterclaim Defendants contend that the 277 Patent is valid and enforceable.

203. Accordingly, a valid and justiciable controversy has arisen and exists between Counterclaim Defendants, Harvard and Bio-Rad, and 10X with respect to the validity of the 277 Patent. 10X desires a judicial determination and declaration of the respective rights and duties of the parties herein. Such a determination and declaration is necessary and appropriate at this time so that the parties may ascertain their respective rights and duties.

204. 10X is entitled to a declaratory judgment that the claims of the 277 Patent are invalid.

III. PATENT INFRINGEMENT COUNTERCLAIMS

Counterclaim Plaintiff 10X Genomics, Inc. ("10X" or "Counterclaim Plaintiff") hereby alleges for its counterclaims for patent infringement against Bio-Rad Laboratories, Inc. ("Bio-Rad" or "Counterclaim Defendant") and nominal Counterclaim Defendant President and Fellows of Harvard College ("Harvard") on personal knowledge as to its own actions and on information and belief as to the action of others.

205. This is an action for infringement of United States Patent Nos. 9,029,085 (the "085 Patent") and 9,850,526 (the "526 Patent") (collectively, the "10X Asserted Patents"). This action arises under the patent laws of the United States, Title 35, United States Code, including 35 U.S.C. § 271.

THE PARTIES

206. 10X is a Delaware corporation with its principal place of business at 6230 Stoneridge Mall Road, Pleasanton, CA 94588.

207. Bio-Rad is a Delaware corporation with its principal place of business at 1000 Alfred Nobel Drive, Hercules, CA 94547.

208. Bio-Rad makes, uses, sells, offers to sell, exports, and/or imports into the United States products, services, and components that have been and are used to infringe one or more

claims of the 10X Asserted Patents, actively induces infringement by others of the 10X Asserted Patents, and/or contributes to the infringement by others of the 10X Asserted Patents. 10X seeks *inter alia* monetary damages and prejudgment interest for Bio-Rad's unauthorized and unlawful acts of infringement.

209. Harvard is a Massachusetts educational institution with a principal place of business at 1563 Massachusetts Avenue, Cambridge, Massachusetts 02138. Harvard is a patent owner and licensor for the 10X Asserted Patents. Harvard is named as a nominal counterclaim defendant in this action for purposes of subject matter jurisdiction only. 10X requested that Harvard join as a party in this counterclaim action, but Harvard has thus far not agreed to do so. Although Harvard is named as a nominal counterclaim defendant, 10X seeks relief realigning Harvard as Counterclaim Plaintiff.

JURISDICTION AND VENUE

210. This civil action for patent infringement arises under the patent laws of the United States, 35 U.S.C. §§ 1 et seq., including in particular under 35 U.S.C. § 271. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

211. This Court has personal jurisdiction over Bio-Rad. Bio-Rad has substantial contacts with the forum as a consequence of conducting business in the Commonwealth of Massachusetts. Bio-Rad has committed, induced, contributed to, controlled, and/or participated in acts of infringement of the 10X Asserted Patents within this District, including without limitation past acts of infringement, and continues to commit, induce, contribute to, control, and/or participate in acts of infringement. Moreover, Bio-Rad has substantial contacts with the forum as a consequence of conducting business in the Commonwealth of Massachusetts.

212. The Court has personal jurisdiction over Bio-Rad for these counterclaims because Bio-Rad has submitted to the jurisdiction of the Court—both in the instant action and in *Bio-Rad*

Labs., Inc. v. Still Techs., Inc., DMA-1-19-cv-11587—and because Bio-Rad has committed and continues to commit acts and/or omissions related to these patent counterclaims in this District including Bio-Rad's filing of the present lawsuit itself.

213. Venue is proper in this Court under 28 U.S.C. §§ 1391 and 1400(b). Bio-Rad has committed, induced, contributed to, controlled, and/or participated in acts of infringement, and continues to commit, induce, contribute to, control, and/or participate in acts of infringement, including without limitation development and testing of the accused products, of the 10X Asserted Patents within the Commonwealth of Massachusetts. For example, Bio-Rad has collaborated and continues to collaborate with Jason Buenrostro—a Broad Fellow of the Broad Institute of MIT and Harvard University—within the Commonwealth of Massachusetts to develop Bio-Rad's ATAC-seq products that infringe the 10X Asserted Patents. On September 19, 2018, Bio-Rad announced its release of a single-cell ATAC-seq solution that is based on its collaboration with Dr. Buenrostro.[1] On information and belief, Bio-Rad collaborates with, induces, and contributes to Jason Buenrostro's practice of Bio-Rad's ATAC-seq with nuclei workflow within the Commonwealth. Bio-Rad has a regular and established place of business in the Commonwealth of Massachusetts, including without limitation because it has established in the Commonwealth dedicated Bio-Rad Supply Centers.[2] For example, on information and belief, Bio-Rad owns, operates, maintains, and stocks Bio-Rad Supply Centers at Massachusetts General Hospital in Boston, University of Massachusetts Medical School in Worcester, Children's Hospital in Boston, and Cell Signaling

[1] https://www.bio-rad.com/en-us/life-science-research/news/bio-rad-launches-its-scatac-seq-solution?vertical=LSR&&ID=Bio-Rad-Launches-its_1561504974

[2] *See, generally,* https://www.bio-rad.com/en-us/life-science-research/purchase-service-programs/supply-center-program?ID=1383773882551

Technology in Danvers.[3] On information and belief, Bio-Rad required that it oversee the installation of the Supply Center in each of those locations (and on information and belief also requires overseeing any reinstallation or removal), monitors and maintains the inventory of Bio-Rad supplies through Bio-Rad-provided and operated software, and provides direct technical support to customers while they are visiting the Massachusetts Supply Centers. The appliances at the Supply Centers are large, immovable pieces of equipment such as a modular freezer, refrigerator, freezer, or ambient unit with locked doors and a touch-screen computer to operate Bio-Rad's software. Bio-Rad employees or agents make routine visits to the Supply Centers to check on and re-stock the inventory, and during those visits are on site and conducting business at the Supply Center. On information and belief, Bio-Rad has a license to occupy and use designated spaces in each of these locations, and each Supply Center occupies an established, physical and geographic location that is set apart from the rest of the facility for the exclusive purpose of Bio-Rad selling its products to its customers. To buy products through the Supply Center, a customer at the Supply Center uses the software at the Center to place an order, pays Bio-Rad through purchase order or credit card, and opens the Supply Center when it unlocks to obtain the products. To return a product that a customer mistakenly purchased, the customer directly calls a Bio-Rad representative before returning the item to the same Supply Center. Bio-Rad advertises these Supply Centers on its website as locations where Bio-Rad supplies are available for purchase and customers are enabled to register and make and pick up their purchases. On information and belief, the Supply Centers are branded with Bio-Rad's logo, and information is provided at that location for contacting Bio-Rad's

[3] *See* https://isurvey.bio-rad.com/isupply17Kiosk/admin/BioRadPriceList.jsp?_ga=2.74382546.1378527774.1580765011-1852606701.1578621874

sales and services representatives. Venue is also independently proper in this district because Bio-Rad is subject to personal jurisdiction in this district, has voluntarily submitted itself to and availed itself of the jurisdiction of this Court and, under the circumstances of this action, has waived any objection to venue over these patent infringement claims in this district.

BACKGROUND AND THE 10X ASSERTED PATENTS

214. On May 12, 2015, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,029,085, entitled "Assays and Other Reactions Involving Droplets." U.S. Application No. 12/529,926, from which the 085 Patent issued, was filed as PCT/US2008/003185 on March 7, 2008, and claims the benefit of U.S. Provisional Application No. 60/905,567, filed on March 7, 2007. Jeremy Agresti, Liang-Yin Chu, David A. Weitz, Jin-Woong Kim, Amy Rowat, Morten Sommer, Gautam Dantas, and George Church are the named co-inventors of the 085 Patent. A true and correct copy of the 085 Patent is attached hereto as Exhibit E.

215. Harvard was assigned all rights, title, and interest in all patents and applications that are related to or claim priority to U.S. Provisional Application No. 60/905,567 and/or U.S. Application No. 12/529,926, including the 085 Patent. Harvard is the sole legal owner of the 085 Patent.

216. 10X is the exclusive licensee, including *inter alia* the right to sue Bio-Rad for its acts of infringement and to recover damages therefrom, of the 085 Patent in an exclusive field that comprises the accused methods of the Accused 085 Instrumentalities, defined below.

217. On December 26, 2017, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,850,526, entitled "Assays and Other Reactions Involving Droplets." U.S. Application No. 14/721,558, from which the 526 Patent issued, claims the benefit of U.S. Application No. 14/172,326 (filed on February 4, 2014, now Patent No. 9,068,210), which is a continuation of application No. 12/529,926 (filed as PCT/US2008/003185 on March 7, 2008 and

now issued as the 085 Patent), which claims priority to U.S. Provisional Application No. 60/905,567 (filed on March 7, 2007). Jeremy Agresti, Liang-Yin Chu, David A. Weitz, Jin-Woong Kim, Amy Rowat, Morten Sommer, Gautam Dantas, and George Church are the named co-inventors of the 526 Patent. A true and correct copy of the 526 Patent is attached hereto as Exhibit F.

218. Harvard was assigned all rights, title, and interest in all patents and applications that are related to or claim priority to U.S. Provisional Application No. 60/905,567 and/or U.S. Application No. 12/529,926, including the 526 Patent. Harvard is the sole legal owner of the 526 Patent.

219. 10X is the exclusive licensee, including *inter alia* the right to sue Bio-Rad for its acts of infringement and to recover damages therefrom, of the 526 Patent in an exclusive field that comprises the accused compositions of the Accused 526 Instrumentalities, defined below.

220. On information and belief, the 10X Asserted Patents were developed through research conducted by Harvard researcher Dr. David Weitz and others in Dr. Weitz's lab at Harvard. Jeremy Agresti, the first named inventor of the 10X Asserted Patents, was a post-doctoral fellow in the Weitz lab during the development of the 10X Asserted Patents. The 10X Asserted Patents are a foundational technology for manufacturing gel beads, particularly for applications involving nucleic acids, and for making droplets with beads specific for applications involving nucleic acids. The claims of the 10X Asserted Patents are novel and non-obvious, including without limitation because key limitations of the claims were not known, well-understood, routine, or conventional to a person of skill in the art at the time of the invention, and/or because the ordered combination of steps was not known, well-understood, routine, or conventional. For example, Claim 1 of the 085 Patent is directed to a novel and non-obvious method of manufacturing a gel bead with attached oligonucleotides, and synthesizing a reaction product that is bound to the gel bead. In another

example, Claim 13 of the 526 Patent is directed to a novel and non-obvious composition: monodisperse aqueous droplets comprising gel particles with reagents for carrying out nucleic acid amplification. The claims depending from Claim 1 of the 085 Patent and Claim 13 of the 526 Patent likewise contain limitations and/or ordered combinations of limitations that were not known, well-understood, routine, or conventional to a person of skill in the art at the time of the inventions. *See, e.g.,* 085 Patent at cols. 35-36; 526 Patent at cols. 35-37.

221. In January 2013, Jeremy Agresti was hired by Bio-Rad as a Senior Staff Scientist to develop NGS technologies for sequencing sample preparation for single cell and other applications. On information and belief, Jeremy Agresti was the principal architect in charge of developing the ddSEQ platform from the project's inception in 2013, and was both Director and Vice-President of R&D at the time of his departure in 2019.

222. In January 2013, on information and belief Bio-Rad knew, should have known, or was willfully ignorant of the existence of U.S. Application No. 12/529,926 (filed as PCT/US2008/003185 on March 7, 2008, and from which the 085 Patent issued) and of U.S. Provisional Application No. 60/905,567 (filed on March 7, 2007).

223. On information and belief, Bio-Rad knew, should have known, or was willfully ignorant of the existence of the 085 Patent on or around May 12, 2015—the day it issued—because at that time Bio-Rad product developers and legal counsel were tracking the patent family claiming priority to U.S. Application No. 12/529,926 (filed as PCT/US2008/003185) through the U.S. Patent Office.

224. On information and belief, Bio-Rad knew, should have known, or was willfully ignorant of the existence of the 526 Patent on or around December 26, 2017—the day it issued—because at that time Bio-Rad product developers and legal counsel were tracking the patent family

claiming priority to U.S. Application No. 12/529,926 (filed as PCT/US2008/003185) through the U.S. Patent Office.

225. On information and belief, Jeremy Agresti and Bio-Rad became aware of Harvard's license to 10X of the patent family claiming priority to U.S. Application No. 12/529,926 (filed as PCT/US2008/003185), including the 085 Patent and the 526 Patent, through communications with Harvard and Jeremy's Agresti's receipt of royalty payments from Harvard relating to 10X's license.

226. On September 19, 2018, Bio-Rad announced the release of its ATAC-seq products. Jeremy Agresti was responsible, on information and belief, for both developing and supervising the development of Bio-Rad's ATAC-seq for nuclei protocols and workflow while he was employed at Bio-Rad between January 2013 and January 2019.

227. On information and belief, Bio-Rad, availed itself of Jeremy Agresti's knowledge and assistance in developing its products and workflow for ATAC-seq for nuclei. In developing its ATAC-seq for nuclei products and workflow, on information and belief, Bio-Rad knew that the technologies are protected by the 10X Asserted Patents and exclusively licensed to 10X.

THE BIO-RAD ACCUSED INSTRUMENTALITIES

228. The "085 Accused Instrumentalities" are all Bio-Rad products and components that are imported, exported, made, used, sold, and/or offered for sale by or on behalf of Bio-Rad in connection with and/or as part of generating gel bead reagent libraries for the generation of barcoded gel beads used in kits for Bio-Rad's ATAC-seq assay for isolated nuclei. Without being limited to the following named products and components, the 085 Accused Instrumentalities include at least SureCell ATAC-Seq Reagent Box A and ATAC Barcode Mix, and also any products or services that include or use barcoded gel beads in performing Bio-Rad's ATAC-seq workflow for nuclei (*e.g.*, Bio-Rad's SureCell ATAC-Seq Library Prep Kits).

229. The "526 Accused Instrumentalities" are all Bio-Rad products and components that are imported, exported, made, used, sold, and/or offered for sale by or on behalf of Bio-Rad in connection with and/or as part of sample preparation for sequencing (specifically, generating droplets comprising barcode beads and isolated nuclei) in Bio-Rad's Single-Cell ATAC-Seq workflow for nuclei, including without limitation all Bio-Rad kits, microfluidic cartridges and cartridge holders, reagents, and instruments used to coencapsulate nuclei and barcoded gel beads for Bio-Rad's Single-Cell ATAC-Seq workflow for nuclei, and/or products containing the same. Without being limited to the following named products and components, the 526 Accused Instrumentalities include at least Bio-Rad's SureCell ATAC-Seq Library Prep Kits, ddSEQ M Cartridges, SureCell ATAC-Seq Reagent Boxes A & B, ATAC Enzyme Buffer, ATAC Enzyme, Enhancer Enzyme, ATAC Barcode Buffer, ATAC Barcode Mix, SureCell ddSEQ Index Kit and/or SureCell ATAC-Seq Index Kit, and ddSEQ Single-Cell Isolators used in Bio-Rad's Single-Cell ATAC-Seq workflow for nuclei.

230. The "Bio-Rad Accused Instrumentalities" include the 085 Accused Instrumentalities and the 526 Accused Instrumentalities.

COUNT XII
(Infringement of U.S. Patent No. 9,029,085)

231. 10X incorporates and realleges paragraphs 206-230 above as if fully set forth herein.

232. On information and belief, Bio-Rad has infringed and continues to willfully infringe one or more claims of the 085 Patent, including but not limited to Claims 1, 3-9, 11, 18, and 19 (the "085 Preliminary Claims") pursuant to 35 U.S.C. 271(a), literally or under the doctrine of equivalents, by making and/or using, offering to sell, selling, exporting, and/or importing into the United States without authority the 085 Accused Instrumentalities. As an example, attached as Exhibit G is a preliminary and exemplary claim chart showing Bio-Rad's infringement of multiple claims of the 085 Patent. This chart is not intended to limit 10X's right to modify this chart or any

other claim chart or allege that other Bio-Rad instrumentalities are used to infringe the identified claims or any other claims of the 085 Patent or any other patents. Exhibit G is hereby incorporated by reference in its entirety. Each claim element in Exhibit G that is mapped to the 085 Accused Instrumentalities shall be considered an allegation within the meaning of the Federal Rules of Civil Procedure and therefore a response to each allegation is required.

233. On information and belief, Bio-Rad is aware of or has acted with willful blindness to the existence of the 085 Patent and the infringement of the 085 Patent as described above. On information and belief, Bio-Rad knew, should have known, or was willfully blind to the existence of the 085 Patent as described above. Moreover, on information and belief, Bio-Rad has known, should have known, or has been willfully blind since before its launch of ATAC-seq and as early as May 12, 2015, that its bead generation infringes one or more claims of the 085 Patent.

234. Bio-Rad's infringement of the 085 Patent has been and continues to be willful, deliberate, and in disregard of 10X's exclusive patent rights. Bio-Rad had knowledge of the 085 Patent as described above, and has proceeded to design, develop, market, and sell the 085 Accused Instrumentalities, with full knowledge that they infringe the 085 Patent. Bio-Rad's intentional, knowing, egregious, culpable, willful, wanton, malicious, bad faith, deliberate, consciously wrongful, and/or flagrant infringement entitles 10X to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

235. Bio-Rad's reliance on its employee Jeremy Agresti's knowledge and assistance in the development of bead generation for Bio-Rad's ATAC-seq for nuclei precludes Bio-Rad from challenging the validity of the 10X Asserted Patents, including as a defense to its liability for infringement thereof.

236. 10X has suffered and continues to suffer damages as a result of Bio-Rad's infringement of the 085 Patent.

COUNT XIII
(Infringement of U.S. Patent No. 9,850,526)

237. 10X incorporates and realleges paragraphs 206-230 above as if fully set forth herein.

238. On information and belief, Bio-Rad has infringed and continues to willfully infringe one or more claims of the 526 Patent, including but not limited to Claims 7, 9-10, and 13-16 (the "526 Preliminary Claims") pursuant to 35 U.S.C. 271(a), literally or under the doctrine of equivalents, by making and/or using, offering to sell, selling, exporting, and/or importing into the United States without authority the 526 Accused Instrumentalities. As an example, attached as Exhibit H is a preliminary and exemplary claim chart showing Bio-Rad's infringement of multiple claims of the 526 Patent. This chart is not intended to limit 10X's right to modify this chart or any other claim chart or allege that other Bio-Rad instrumentalities are used to infringe the identified claims or any other claims of the 526 Patent or any other patents. Exhibit H is hereby incorporated by reference in its entirety. Each claim element in Exhibit H that is mapped to the 526 Accused Instrumentalities shall be considered an allegation to within the meaning of the Federal Rules of Civil Procedure and therefore a response to each allegation is required.

239. On information and belief, Bio-Rad has induced and continues to induce infringement of one or more claims of the 526 Patent, including but not limited to the 526 Preliminary Claims, pursuant to 35 U.S.C. § 271(b) and (f) by encouraging, instructing, and/or aiding and abetting third parties such as users, customers, affiliates, parents, subsidiaries, importers, exporters, and/or sellers to at least use the 526 Accused Instrumentalities to infringe one or more claims of the 526 Patent. Bio-Rad either itself acts or induces others to use the 526 Accused Instrumentalities to generate the claimed compositions as described in Exhibit H. Bio-Rad advertises the 526 Accused Instrumentalities and encourages the use of 526 Accused Instrumentalities by other entities by designing, selling, offering for sale, marketing, advertising, and instructing on the use of its ATAC-seq workflow for nuclei. *See* Bio-Rad's "How Single-Cell ATAC-Seq Works" video, available at https://www.youtube.com/watch?v=9K5Q7oEO7ss. *See also* the instruction, marketing, and advertising presented by Bio-Rad at https://www.bio-

rad.com/en-us/product/surecell-atac-seq-library-prep-kit?ID=PEXSR1MC1ORV&source_wt=ATACSeqToolkit, including the "Overview", "Description," "Documents," "Downloads," and "Datasets" provided therein, and including for example the following documents.

- https://www.bio-rad.com/webroot/web/pdf/lsr/literature/Bulletin_7167.pdf ("Bulletin 7167");
- http://www.bio-rad.com/webroot/web/pdf/lsr/literature/ATAC-Seq_Poster.pdf (SureCell ATAC-Seq Library Prep Kit "Poster");
- https://www.bio-rad.com/webroot/web/pdf/lsr/literature/10000106678.pdf (SureCell ATAC-Seq Library Preparation Kit, "User Guide"); and
- https://www.bio-rad.com/webroot/web/pdf/lsr/literature/10000069430.pdf ("ddSEQ Single Cell Isolator Instruction Manual").

240. As a result of Bio-Rad's marketing, advertising, instruction, and sales, other entities on information and belief use the 526 Accused Instrumentalities for their intended purpose and according to their instructions with the result that such entities—such as Bio-Rad's customers and users of the 526 Accused Instrumentalities—directly infringe the asserted claims of the 526 Patent, literally or under the doctrine of equivalents, for the reasons stated above. *See* https://www.diagenode.com/en/p/single-cell-atac-seq-service (Diagenode, commercial Single-Cell ATAC-seq Services, for which Bio-Rad is a preferred service provider; North American headquarters in Denville, New Jersey). Bio-Rad not only instructs Diagenode on how to use the 526 Accused Instrumentalities, Bio-Rad instructs users, customers, researchers, and other entities that Diagenode is a preferred provider of the 526 Accused Instrumentalities. *See* November 19, 2019 Bio-Rad Press Release, "Diagenode to Offer Single-Cell ATAC-Seq Services Featuring Bio-Rad's Droplet Digital Technology," at https://www.bio-rad.com/en-us/life-science-research/news/diagenode-offer-single-cell-atac-seq-services-featuring-bio-rads-droplet-digital-technology?ID=Diagenode-to-Offer-S_1574112433 ("Diagenode, Inc. … and Bio-Rad Laboratories, Inc. … today announced a partnership in which Diagenode will offer Single-Cell ATAC-Seq (scATAC-Seq) Services, featuring Bio-Rad's Droplet Digital technology, to help advance epigenomics research."). As explained below, on information and belief, Bio-Rad

performs the above acts or has them performed on its behalf knowing and intending that such acts will result in such other entities using the 526 Accused Instrumentalities, while knowing or being willfully blind that such acts of use constitute direct infringement of the asserted claims of the 526 Patent.

241. On information and belief, Bio-Rad has contributed to the infringement of one more claims of the 526 Patent, including but not limited to the 526 Preliminary Claims pursuant to 35 U.S.C. § 271(c) and (f) by importing, selling, exporting, and/or offering for sale the 526 Accused Instrumentalities, or has others perform such acts on its behalf, specifically so that those 526 Accused Instrumentalities will be used to infringe one or more claims of the 526 Patent. Further, the 526 Accused Instrumentalities were designed specifically to be used in a manner that infringes the asserted claims of the 526 Patent. For example, and without limitation, Bio-Rad's ATAC-Seq Library Prep Kits, SureCell ATAC-Seq Reagent Boxes A & B, ATAC Enzyme Buffer, ATAC Enzyme, ATAC Barcode Buffer, ATAC Barcode Mix, and SureCell ATAC-Seq Index Kit are material components of the claimed inventions. When these components are used, the claims of the 526 Patent are infringed, as described above. Thus, these components are a material part of the claimed inventions of the 526 Patent that when used result in infringement. As a result of Bio-Rad's importing selling, exporting, and/or offering for sale 526 Accused Instrumentalities, other entities on information and belief use the 526 Accused Instrumentalities for their intended purpose and according to their instructions with the result that such entities—such as Bio-Rad's customers and users of the Accused Instrumentalities, e.g., Diagenode—directly infringe the asserted claims of the 526 Patent, literally or under the doctrine of equivalents, for the reasons stated above. *See* https://www.diagenode.com/en/p/single-cell-atac-seq-service (Diagenode, commercial Single-Cell ATAC-seq Services, for which Bio-Rad is a preferred service provider; North American headquarters in Denville, New Jersey). As explained below, on information and belief, Bio-Rad acts and has acted—including specifically by supplying the 526 Accused Instrumentalities and/or components thereof—knowing and willfully blind as to the existence of the 526 Patent claims and

as to the fact that the 526 Accused Instrumentalities are especially made and adapted for this use in an infringing manner, are not staple articles of commerce capable of substantial non-infringing uses.

242. On information and belief, Bio-Rad is aware of or has acted with willful blindness to the existence of the 526 Patent and the infringement of the 526 Patent, as described above, by third parties, including without limitation users, customers, affiliates, parents, subsidiaries, third parties, importers, exporters, and/or sellers. On information and belief, Bio-Rad knew, should have known, or was willfully blind to the existence of the 526 Patent as described above. Moreover, on information and belief, Bio-Rad has known, should have known, or has been willfully blind since December 26, 2017, that its ATAC-seq workflow for nuclei infringes one or more claims of the 526 Patent.

243. Bio-Rad's reliance on its employee Jeremy Agresti's knowledge and assistance in the development of Bio-Rad's ATAC-seq for nuclei protocols and workflow precludes Bio-Rad from challenging the validity of the 10X Asserted Patents, including as a defense to its liability for infringement thereof.

244. 10X has suffered and continues to suffer damages as a result of Bio-Rad's infringement of the 526 Patent.

245. Bio-Rad's infringement of the 526 Patent has been and continues to be willful, deliberate, and in disregard of 10X's exclusive patent rights. Bio-Rad had knowledge of the 526 Patent as described above, and has proceeded to design, develop, market, and sell the 526 Accused Instrumentalities, with full knowledge that they infringe the 526 Patent. Bio-Rad's intentional, knowing, egregious, culpable, willful, wanton, malicious, bad faith, deliberate, consciously wrongful, and/or flagrant infringement entitles 10X to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

PRAYER FOR RELIEF

WHEREFORE, 10X respectfully requests that the Court enter the following relief in its favor and against Bio-Rad and Harvard:

A. That Bio-Rad and Harvard's Complaint be dismissed with prejudice and Bio-Rad and Harvard take nothing;

B. Judgment in favor of 10X against Bio-Rad and Harvard's Complaint;

C. A declaration that the 444 Patent is invalid;

D. A declaration that 10X has not directly and literally infringed any claim of the 444 Patent;

E. A declaration that the 277 Patent is invalid;

F. A declaration that 10X has not directly and literally infringed any claim of the 277 Patent;

G. A declaration that Bio-Rad's acquisition of RainDance was anticompetitive and unlawful;

H. A declaration that Bio-Rad has unlawfully monopolized the ddPCR Product Market;

I. A declaration that Bio-Rad has unlawfully attempted to or actually monopolized the Droplet Genetic Analysis Technology Market;

J. A declaration that Bio-Rad has unlawfully attempted to monopolize the Droplet Single-Cell Product Market;

K. A declaration that Bio-Rad has engaged in unfair competition under the UCL;

L. A permanent injunction requiring Bio-Rad to divest all patents and patent licenses as well as the ddPCR products it obtained in connection with its acquisition of RainDance to a third party willing and able to license such patents at competitive rates and that will not inflate such rates based on the incentive to foreclose competitors in the Droplet Single-Cell Product Market, and that is willing to sell such ddPCR products at competitive prices;

M. In the alternative where Bio-Rad is allowed to keep the RainDance assets, a permanent injunction requiring Bio-Rad to license at competitive rates and/or rates not inflated by the incentive to foreclose competitors in the Droplet Single-Cell Product Market all patents it obtained or licensed in connection with its acquisition of RainDance and all patents in the same Droplet Genetic Analysis Technology Market as such acquired RainDance patents regardless of when Bio-Rad obtained or licensed such patents;

N. An injunction requiring Bio-Rad to cease all activities constituting unfair competition under the UCL;

O. An award of damages (including lost profits) in 10X's favor in an amount to be determined, trebled to the extent permitted by the antitrust laws;

P. A judgment that Bio-Rad has infringed and continues to infringe one or more claims of the 10X Asserted Patents;

Q. A judgment that Bio-Rad has induced infringement and continues to induce infringement of one or more claims of the 10X Asserted Patents;

R. A judgment that Bio-Rad has contributed and continues to contribute to infringement of one or more claims of the 10X Asserted Patents;

S. A judgment that Bio-Rad has willfully infringed one or more claims of the 10X Asserted Patents;

T. An award of all monetary relief adequate to compensate for damages resulting from Bio-Rad's infringement, including lost profits but in no event less than a reasonable royalty under 35 U.S.C. § 284 for Bio-Rad's infringement, including all pre-judgment and post-judgment interest at the maximum rate allowed by law;

U. A judgment awarding treble patent damages pursuant to 35 U.S.C. § 284 as a result of Bio-Rad's willful conduct in relation to the 10X Asserted Patents;

V. That Bio-Rad be required to pay 10X's attorneys' fees and costs;

W. A declaration that the case is an exceptional case and that Bio-Rad be required to pay 10X's attorneys' fees pursuant to 35 U.S.C. § 285;

X. A judgment awarding 10X such other and further relief as the Court may deem just, reasonable, and proper.

10X reserves the right to amend its Partial Answer and Amended Counterclaims to raise additional defenses and counterclaims as warranted by subsequent investigation and/or analysis, after the Court rules on 10X's pending motions to dismiss, or Plaintiffs amend their pleadings in response to 10X's pending motions to dismiss under Rule 12(b)(6) of Federal Rules of Civil Procedure.

DEMAND FOR JURY TRIAL

10X acknowledges Plaintiffs' request for a jury trial, and pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, 10X also demands a jury trial on all issues so triable.

Date: February 5, 2020

Respectfully submitted,

/s/ *Matthew D. Powers*

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on February 5, 2020, a copy of the foregoing document was electronically filed with the clerk of the Court using the CM/ECF system, which will issue an electronic notification of filing to all counsel of record.

/s/ Matthew D. Powers
Matthew D. Powers